

UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF VIRGINIA  
Alexandria Division

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BMG RIGHTS MANAGEMENT (US) LLC, :  
et al., :  
 :  
Plaintiffs, :  
 :  
vs. : Case No. 1:14-cv-1611  
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 :  
 :  
COX ENTERPRISES, INC., et al., :  
Defendants. :  
----- :

VOLUME 5 (A.M. portion)

TRIAL TRANSCRIPT

December 8, 2015

Before: Liam O'Grady, USDC Judge

And a Jury

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1           NOTE: The December 8, 2015 portion of the case  
2 begins in the absence of the jury as follows:

3 JURY OUT

4           THE COURT: All right. Good morning. I see everyone  
5 is here. Good morning to each of you.

6           You had a preliminary matter, Mr. Buckley?

7           MR. BUCKLEY: If we can take up one matter, Your  
8 Honor.

9           THE COURT: Yes.

10          MR. BUCKLEY: Plaintiffs are planning to call their  
11 economic expert, Dr. Lehr, this afternoon.

12          THE COURT: All right.

13          MR. BUCKLEY: And we had a brief exchange with you,  
14 Your Honor, on the Tuesday before trial and you had indicated  
15 that you were rethinking portions of your Daubert ruling, and I  
16 heard it one way and plaintiffs heard it another.

17               What I heard was that Dr. Lehr was still not going to  
18 be permitted to testify about harm to the industry generally,  
19 that copyright infringement is bad and it displaces legitimate  
20 sales and that sort of thing, that it needs to actually be harm  
21 to these plaintiffs and calculations that relate to Cox. I  
22 believe plaintiffs have a different view.

23               And so, I wanted to preview it now because he's  
24 coming on this afternoon and it may affect prep on both sides.

25          THE COURT: Okay. Mr. Warin.

1           MR. WARIN: Good morning, Your Honor. I think what  
2 prompted this is we circulated, as we have been, not only the  
3 exhibits we intend to use, but the demonstratives we would hope  
4 to use with Dr. Lehr.

5           And I can hand up to you the -- and I've gone back  
6 and read the transcript of the hearing on Tuesday, and it's our  
7 understanding that what you didn't want Dr. Lehr to testify,  
8 and which we don't intend to have him testimony, is as to any  
9 sociological-type testimony. You excluded one of their expert  
10 witnesses. They haven't objected to all of those, Your Honor.  
11 Only the ones I put check marks on. I think it's the first  
12 three or four.

13           And even on the first one, they don't object to the  
14 entire testimony. They only object to the portion of it that  
15 says, "copyright infringement causes significant harm to  
16 copyright holders."

17           It's our belief that in order to prove our case, we  
18 should be allowed to put on testimony as to the general  
19 industry harm that is caused to copyright holders. Our clients  
20 are in the subset of copyright holders. And so, therefore, the  
21 jury could conclude that our clients are injured in the same  
22 way that other copyright holders are.

23           There are numerous studies Dr. Lehr refers to. Dr.  
24 Sullivan, interestingly enough, refers to those same studies.  
25 Dr. Sullivan's testimony is premised upon the same kind of

1 thing that the Court said you shouldn't be able to do, which is  
2 customer choices. And I can go through Dr. Sullivan's  
3 testimony and say where he's predicting customer choices.  
4 Actually, Dr. Lehr doesn't do that.

5 And so, we're at a disadvantage if Dr. Sullivan is  
6 allowed to testify to that and Mr. Lehr isn't. So what he's  
7 done in the -- that first bullet and then the ones that follow  
8 it is he's shown harm from the data he's relied on to patent  
9 holders -- excuse me -- to copyright holders, and then he goes  
10 on to say, but even though there's been this general harm in  
11 the industry, even though BitTorrent is 99 percent  
12 infringement, it's impossible to calculate with any degree of  
13 reasonable scientific or economic certainty the harm to these  
14 individuals.

15 Now, as you are aware, in a statutory damages  
16 situation like we've got, we are not required to prove what the  
17 harm is to the individuals. That could be a factor. And  
18 Dr. Sullivan's testimony says that's basically the only factor,  
19 and he said that there's either no harm to the individuals or  
20 very little.

21 In order for Dr. Lehr to explain why he didn't  
22 calculate the harm to the individuals, he has to go through the  
23 background to explain these calculations.

24 And so, we think it's within the boundaries of the  
25 economic testimony that this Court said on Tuesday -- the Court

1 said, "I think if his testimony is going to be offered for  
2 financial incentive, vicarious liability, cost of enforcing the  
3 notices, cost of bandwidth, file sharing," that's what the  
4 Court said on Tuesday should be allowed to be within his  
5 testimony.

6 So he's saying about general harm to copyright  
7 holders. Our clients are copyright holders. Then he explains  
8 why it's impossible to calculate the specific harm to our  
9 copyright holders with respect to these copyrights.

10 THE COURT: All right. Thank you, Mr. Warin.  
11 Mr. Buckley.

12 MR. BUCKLEY: Your Honor, Dr. Lehr can make the  
13 statement that it's impossible to calculate actual harm without  
14 also talking about theoretical harm to the industry. And we  
15 identified Dr. Karaganis and portions of Dr. Sullivan's  
16 testimony specifically to rebut that notion.

17 And so, I just want to remind the Court and  
18 plaintiffs that Dr. Lehr was prepared -- or Dr. Karaganis was  
19 prepared to testify that it's not clear, in fact, that file  
20 sharing harms copyright holders in the way that Dr. Lehr  
21 suggests, that he only talks about the negative impacts of  
22 infringement without addressing the positive impacts, that the  
23 reports he relies on are only a part of the story, that there  
24 are important noneconomic reasons for ISPs to be careful about  
25 terminating folks.

1           So it opens up this whole other area of testimony,  
2           and I thought that's what Your Honor wanted to avoid. He can  
3           certainly say it's impossible to calculate harm in this case  
4           and that's why statutory damages are appropriate, but this  
5           other material is a rabbit hole.

6           THE COURT: Well, Karaganis was, you know, the  
7           sociologist who was going to give us the social science reasons  
8           for that, and that I found outside the relevancy in this case,  
9           but, you know, Lehr is talking about actual infringement using  
10          BitTorrent statistics and saying what I think is uncontestable.  
11          Which is, if people don't get paid for their copyrighted  
12          materials, they lose money. Now, that -- I think that's what  
13          he is going to say. You know, he said copyright holders -- you  
14          know, infringement causes harm.

15          I don't see that as the broad open window that I  
16          think you're envisioning. And maybe I'm just not envisioning  
17          it correctly. But I think it's reasonable that Lehr would say  
18          there's copyright infringement here, copyright infringement  
19          causes harm. The harm to BMG's clients is -- you know, there  
20          is harm, but I can't calculate that harm with any finite  
21          calculation. And, therefore, we are doing statutory damages.

22          That's what I was talking about on Tuesday, and  
23          that's where I was going because of the vicarious  
24          liability/financial side of things.

25          Is that what we're talking about, Mr. Warin?



1 MR. WARIN: You summarized precisely what Dr. Lehr's  
2 testimony will be with respect to the slides they objected to.

3 THE COURT: Then I am going to allow that.

4 MR. BUCKLEY: Can I make one last point, Your Honor?

5 THE COURT: Yes, sir.

6 MR. BUCKLEY: If that is Dr. Lehr's testimony that  
7 copyright infringement causes harm to copyright holders, we  
8 have two experts who will say that's not true and there are  
9 reasons to believe that, net, it doesn't cause harm to  
10 copyright holders.

11 THE COURT: Karaganis is --

12 MR. BUCKLEY: So we're going to have testimony from  
13 Dr. Sullivan to that point, and depending upon what he says, we  
14 may have to ask your permission to bring Dr. Karaganis after  
15 all because that's exactly what his testimony goes to.

16 THE COURT: Yeah, but it wasn't -- you know, I guess  
17 my problem is Sullivan and Lehr are doing math calculations and  
18 using numbers, and they are testifying in the real world.  
19 Karaganis is up in the stratosphere talking about it on a  
20 different analytical level. And I didn't think that his  
21 analytical approach was relevant to this suit. So that was my  
22 problem with Karaganis.

23 I gave you Sullivan even though I had some problems  
24 with his methodology. And, of course, BMG has great problems  
25 with his methodology, but I think that is something

1 cross-examination can handle. And at least they are talking  
2 apples and apples. Karaganis is talking oranges. So that was  
3 my problem.

4 But, you know, let's see how it goes. You profer to  
5 me why you think it's relevant at the time it is relevant, I  
6 will make a decision. But that's where we are going to go with  
7 Lehr to start.

8 MR. BUCKLEY: Okay, Your Honor. And I think the  
9 issue is just that on this particular issue it is not within  
10 Dr. Lehr's expertise. He went out and did some research. It's  
11 not calculations. It's -- you know, you saw their slide  
12 number 3. It is a bunch of articles that he read, and for each  
13 one of those that are five that say something else.

14 So I don't think it is apples to apples with what Dr.  
15 Sullivan is doing, and that's the problem. He is being allowed  
16 to testify about things that aren't economic at all. They are  
17 sociological and they are based on a literature review he did.  
18 He has never testified in a copyright case, he's never  
19 testified in a music industry case.

20 THE COURT: Yeah, but he is looking at sales, the dip  
21 in sales figures, and he is tying it into the BitTorrent data.  
22 That's -- I mean, that's math at least. All right.

23 MR. WARIN: Thank you, Your Honor.

24 MR. BUCKLEY: Thank you, Your Honor.

25 THE COURT: Okay. And I looked at the exhibits last

1 night, the book of exhibits that BMG seeks to introduce as  
2 self-authenticating, and I believe they are. So I will admit  
3 them at this time.

4 MR. BUCKLEY: Your Honor, just one other issue with  
5 regard to Dr. Lehr. So he was going to testify -- is going to  
6 testify about some of Cox's financial information, which is  
7 fine and fine that it come in. The only request that we made  
8 of the plaintiffs and that I am making now of Your Honor is  
9 that when that material comes up, that it not be put on that  
10 screen or these two screens where it can be seen from the  
11 gallery. My understanding is that that can be done, and we  
12 were shown that in the IT tutorial.

13 And we will do them the same courtesy with BMG's  
14 finances when they come up.

15 THE COURT: Any objection about that?

16 MR. WARIN: No, we talked about that last night and  
17 we have no objection.

18 THE COURT: All right. Then --

19 MR. BUCKLEY: We are going to need to get --

20 THE COURT: It is up to you to figure out how to do  
21 it.

22 MR. BUCKLEY: Yeah, we will figure it out.

23 THE COURT: All right. Are we ready for our jury  
24 then?

25 MR. CARACAPPA: One quick question.

1 THE COURT: Yes, sir.

2 MR. CARACAPPA: With respect to the e-mails, should  
3 we just give a list to the court reporter so that they can be  
4 admitted?

5 THE COURT: Yes, sir, please do.

6 MR. CARACAPPA: Okay. And I think we have an  
7 agreement on PXS 4, as well as all the exhibits referenced in  
8 PXS 4. It is just a summary of the Rightscorp notification,  
9 and it is one for each asserted work.

10 THE COURT: Okay. And what's the agreement?

11 MR. CARACAPPA: The agreement is that with the  
12 Court's permission this evidence will be admitted.

13 THE COURT: Okay. Is that right, Mr. Buckley?

14 MR. BUCKLEY: Yes, Your Honor, no further objection.

15 THE COURT: All right. Then PXS 4 is received.

16 MR. CARACAPPA: Thank you, Your Honor.

17 THE COURT: Okay. Joe, let's get our jury.

18 Do we have Mr. Boswell around?

19 MS. ROBERTS: Yes, they are getting him right now.

20 THE COURT: Okay. Thank you.

21 NOTE: At this point the jury returns to the  
22 courtroom; whereupon the case continues as follows:

23 JURY IN

24 THE COURT: Please be seated.

25 Good morning, ladies and gentlemen. I hope you had a

1 good evening and had less traffic than I had coming in this  
2 morning. Boy, was it bad this morning coming my way.

3 Did you all heed my request that you not do any  
4 research or investigation or talk to anybody about it? All  
5 right. Thank you very much.

6 All right, Mr. Caracappa. Good morning, Mr. Boswell.

7 THE WITNESS: Good morning.

8 THE COURT: Let's continue our direct.

9 MR. CARACAPPA: Thank you, Your Honor.

10 GREG BOSWELL, a witness called by counsel for the  
11 plaintiff, having been previously sworn, continues to testify  
12 and state as follows:

13 DIRECT EXAMINATION

14 BY MR. CARACAPPA: (Continuing)

15 Q. Good morning. Good morning.

16 Mr. Boswell, do you still have your witness binder in  
17 front of you?

18 A. Yes, I do. Can you hear me?

19 Q. I can, yes. Thanks.

20 A. All right.

21 Q. Just to recap, we spoke yesterday about the Rightscorp  
22 system and generally what it does. We were talking about the  
23 notices in the SampleIT2 program when we broke for the day. Do  
24 you recall that?

25 A. Yes, I do, sir.

1 Q. Where does Rightscorp send the Cox notices?

2 A. The Cox notices, the Cox notices are sent to  
3 abuse@cox.net.

4 Q. And how did Rightscorp know where to send those notices?

5 A. Those are the registered DMCA notice addresses that Cox  
6 had supplied to the government.

7 Q. Do you have an understanding as to whether or not Cox  
8 actually received those e-mailed notices?

9 A. Yes, I do.

10 Q. And what is that understanding?

11 A. From a software point of view, the notices we've sent were  
12 all accepted. They accepted bundles of notices from us every  
13 day.

14 Q. Can you please explain.

15 A. Sure. We have a standard e-mail program that we put  
16 our -- send our e-mails to. It's a postal program, Internet  
17 standard. And when we -- we watch the logs of that. And when  
18 we put e-mail out to Cox, they accept bundles of e-mail every  
19 day from us.

20 Q. Okay. Thank you, Mr. Boswell. Can you please turn to  
21 DTXSC 0231.

22 A. DTXSC 0231?

23 Q. Yes.

24 A. All right.

25 Q. Mr. Boswell, what is that document?

1 A. This is a FullFileFix.txt. FullFileFix.txt.

2 Q. Are you familiar with this document?

3 A. Yes, I am.

4 Q. How are you familiar with this document?

5 A. I generated the code in this document, and this document  
6 too.

7 Q. Okay. Mr. Boswell, what, if anything -- strike that.

8 Your Honor, at this time we would like to admit DTXSC  
9 0231 into evidence.

10 MR. BUCKLEY: No objection.

11 THE COURT: 30 or 31?

12 MR. CARACAPPA: 231.

13 THE COURT: All right. Any objection?

14 MR. BUCKLEY: No objection, Your Honor.

15 THE COURT: Received.

16 BY MR. CARACAPPA: (Continuing)

17 Q. Mr. Boswell, what is this document?

18 A. This is an event piece of code that is run inside of a  
19 database engine.

20 Q. What, if anything, does this piece of code have to do with  
21 the 10 percent bitfield that we have been discussing?

22 A. This is what runs the 10 percent bitfield post-process  
23 program.

24 Q. And when was this document created?

25 A. Well, this piece of code was created on 2014, 12/02.

1 Q. How do you know?

2 A. It states it right there in the header, and that's the  
3 date I created it.

4 Q. Was this piece of code used at all to generate any of the  
5 notices that were sent to Cox during the relevant time period?

6 A. No.

7 Q. How do you know?

8 A. Because I wrote the code, and it is past the relevant time  
9 period.

10 Q. Okay. Thank you, Mr. Boswell.

11 Mr. Boswell, can you turn to PXS 3, please.

12 A. PXS 3. All right.

13 Q. Do you see that?

14 A. Yes, I do, sir.

15 Q. Are you familiar with this document?

16 A. Yes, I am, sir.

17 Q. What is this document?

18 A. This is a summary of the data that was provided to the  
19 counsel.

20 Q. Are you familiar with how this document was created?

21 A. Yes, I am.

22 Q. Please explain.

23 A. This document was created at my direction to the  
24 administer -- or the analyst company. I worked with their  
25 person, Lance. And Lance and I had several phone calls and we



1 had a WebEx seminar of over an hour. I walked line by line of  
2 Lance's R code and helped him build this process or directed  
3 him in building this process that produced this data.

4 Q. Did you run any tests on that code to confirm that it was  
5 accurate and worked as you directed?

6 A. Yeah, I did a rough test and was very satisfied with the  
7 numbers.

8 MR. CARACAPPA: Your Honor, at this time we would  
9 like to move into evidence PXS 3.

10 THE COURT: Any objection?

11 MR. BUCKLEY: Your Honor, subject to the same expert  
12 testimony and foundation objections we made yesterday.

13 THE COURT: All right. Your exception is noted. I  
14 will receive the document.

15 BY MR. CARACAPPA: (Continuing)

16 Q. Thank you. All right. Mr. Boswell, let's look at this  
17 document. Can you explain please what's in this document.

18 A. Surely. Starting at the far left is the PA Number. That  
19 was the number assigned for the copyright that this document --  
20 this line on this document represents.

21 The Song Title is the song title associated with that  
22 PA number. In this case on the first line, Hanging on the  
23 Telephone Line.

24 The Artist is Blondie, who produced Hanging on the  
25 Telephone Line.

1                   We had -- we go over to line 3, Total Samples. We  
2 had downloaded 67 samples of Blondie, Hanging on the Telephone  
3 Line, from Cox.

4                   And we had e-mailed 1,744 notices to Cox about  
5 Blondie, Hanging on the Telephone Line.

6 Q.    Let's go to the last page of that document.

7 A.    All right.

8 Q.    Do you see that, Mr. Boswell?

9 A.    I do, sir.

10 Q.   Can you explain to the jury what those total numbers  
11 reflect.

12 A.   Sure. The total numbers reflect the -- 150,900 reflects  
13 the total amount of samples that were collected for the  
14 asserted works for BMG.

15 Q.   Thank you, Mr. Boswell.

16 A.   The 1,800,000 -- 1,847,516 reflects the total notices sent  
17 to Cox for the asserted works for BMG.

18 Q.   Do you have an understanding as to whether the Rightscorp  
19 system accurately identifies infringements on the Cox network?

20 A.   Do I -- could you repeat the question?

21 Q.   Sure. Do you have an understanding as to whether the  
22 Rightscorp system accurately identifies infringements on the  
23 Cox network?

24                   MR. BUCKLEY: Legal opinion, Your Honor.

25                   THE COURT: Ask him whether he has tested the system,

1 determined whether he thinks it's accurate without giving the  
2 legalese language.

3 MR. CARACAPPA: Understood, Your Honor. Thank you.

4 THE COURT: All right.

5 BY MR. CARACAPPA: (Continuing)

6 Q. Mr. Boswell, do you believe that the Rightscorp system is  
7 accurate?

8 A. Yes, I do, sir.

9 MR. CARACAPPA: Your Honor, pass the witness.

10 THE COURT: All right.

11 CROSS-EXAMINATION

12 BY MR. BUCKLEY:

13 Q. Good morning, Mr. Boswell.

14 A. Good morning, sir.

15 Q. I believe you and I have met. My name is Brian Buckley.  
16 I am one of the lawyers for Cox.

17 So you testified a little bit yesterday about your  
18 background, right?

19 A. Correct, sir.

20 Q. And the number of jobs you have had over time?

21 A. Some of them I have listed, yes, sir.

22 Q. And I believe you testified that you actually helped found  
23 Rightscorp in 2011; is that right?

24 A. I believe so, sir, yes.

25 Q. And in the beginning it was you and Robert Steele and

1 Christopher Sabec; is that right?

2 A. That's correct, sir.

3 Q. When did you actually start to develop the Rightscorp  
4 code?

5 A. 2011.

6 Q. When did you write the first line of that code?

7 A. I am not sure of the exact date.

8 Q. Is it sometime in 2011?

9 A. Sometime in 2011.

10 Q. You started sending notices to ISPs in March of 2011; is  
11 that right?

12 A. Without looking back, I will -- not quite sure.

13 Q. Does that sound accurate to you?

14 A. It could be, sir.

15 Q. Okay. So if Mr. Steele said that the first notices went  
16 out in March of 2011, would you disagree with that?

17 A. I wasn't here to hear his testimony, sir.

18 Q. But if he said that, would you disagree with that?

19 A. I couldn't disagree or agree with it.

20 Q. Okay. Do you believe that when the first notices started  
21 going out to ISPs, that the code had already been developed?

22 A. Can you rephrase that, sir?

23 Q. Did you send any notices to ISPs before you had developed  
24 the Rightscorp code?

25 A. No.

1 Q. So if it's true that Cox got its first notice from  
2 Rightscorp in March of 2011, then you had done at least some  
3 code development as of that point, right?

4 A. Correct.

5 Q. But you don't remember as you sit here today how much?

6 A. Not enough, no.

7 Q. Sorry.

8 A. 2011, outside of the date range that we are currently  
9 looking at, I have not looked back at 2011 to see the exact  
10 date I started code.

11 Q. Okay. But my question is, there would have been some code  
12 in place when the notices started going out, right?

13 A. Yes, there would have been.

14 Q. Okay. Do you know, would there have been a fully  
15 functioning Rightscorp system at that point, the way you think  
16 of the system now?

17 A. 2011, probably not.

18 Q. When do you -- you testified yesterday about how the code  
19 functions now, right?

20 It has got the five different steps in it or modules  
21 in it, right?

22 A. Correct.

23 Q. When -- what was the first point in time where all five of  
24 those steps existed?

25 A. Probably very late 2011.

1 Q. Late 2011?

2 A. Yes, possibly.

3 Q. Mr. Boswell, you are familiar with BitTorrent, right?

4 A. Yes, I am very familiar with BitTorrent.

5 Q. You gave us some information about it yesterday in your  
6 direct testimony.

7 A. Yes, I did.

8 Q. It's true, isn't it, that a torrent payload can include a  
9 variety of types of files, right?

10 A. Absolutely.

11 Q. And any number of files?

12 A. Absolutely.

13 Q. And different file sizes?

14 A. Yes.

15 Q. And it's also true, isn't it, that a song is not usually a  
16 single piece of a payload, right?

17 A. It's not the norm, but there are times when it is.

18 Q. Okay. But typically a song would be broken up into  
19 several pieces of a payload, right?

20 A. Can you rephrase that question?

21 Q. I think you said in your deposition that a song is usually  
22 three or four pieces.

23 A. Yes, but it can be a single act -- a single instance of a  
24 torrent. The torrent can only have one song, which is common.

25 Q. Okay. And my point is only that a song file in a torrent

1 payload may actually be broken up into several pieces, it might  
2 not just be a piece by itself?

3 A. Oh, absolutely, yes.

4 Q. And could you download just part of the torrent payload if  
5 you want, right?

6 A. Yes, you can.

7 Q. I can go to a torrent payload and there may be things in  
8 there -- articles or other things I want to see, I can just  
9 pick those out. I don't have to pick songs that might also be  
10 in the payload?

11 A. You can choose -- with the BitTorrent clients, I believe  
12 you can choose part of the payload that you want to download.

13 Q. And some of this is pretty technical, but you also talked  
14 yesterday about torrent hashes and how your system uses torrent  
15 hashes. Do you remember that?

16 A. Yeah. The torrent hash is a standard identification for  
17 all the torrents.

18 Q. Okay. And that was going to be my question, actually. It  
19 just identifies the torrent, right? It doesn't identify pieces  
20 of the torrent payload?

21 A. No, it is a hash of the torrent. It does not identify  
22 pieces of the payload, correct.

23 Q. Does not identify?

24 A. Does not --

25 Q. Sorry.

1 A. Not a problem, just a second.

2 It does not identify pieces of the payload.

3 Q. Thank you. Mr. Boswell, it is true, isn't it, Rightscorp  
4 doesn't have information about the actual sharing of torrent  
5 payloads between any two particular people, right?

6 A. Unless we are one of the people that they are sharing the  
7 payload with, no, we do not have information between two peers  
8 that are not ours.

9 Q. And as far as you know, the only transmission of anything  
10 from an IP address that Rightscorp detects is to Rightscorp,  
11 right?

12 A. Correct.

13 Q. And you don't have actual knowledge that any Cox  
14 subscriber has engaged in any copyright infringement activity,  
15 right?

16 A. All we know is it's a Cox IP address.

17 Q. And you've acknowledged and I think you might have even  
18 alluded to this yesterday that when you see activity at an IP  
19 address, you don't know the person that is doing that?

20 A. Do not know the person, no, absolutely not.

21 Q. And you don't know that it is a Cox subscriber?

22 A. We just knows it is a Cox IP address.

23 Q. Okay. And it could be a neighbor?

24 A. Probably -- possibly could be a neighbor.

25 Q. If it's open WiFi, right, anybody wherein range of the



1 WiFi could be using it?

2 A. If someone left their system unsecure, then yes, someone  
3 could be using it.

4 Q. But --

5 A. Someone not -- who is not in charge of the IP address  
6 could be using it.

7 Q. And if it is not a residential account, say it's a coffee  
8 shop, then it could be any number of people using it, right?

9 A. That's true.

10 Q. And you have done that, you have used open WiFi?

11 A. I have used open WiFi.

12 Q. Did you help draft -- we have talked about the notices  
13 that go out from the Rightscorp system to ISPs, right?

14 A. Correct.

15 Q. Did you help draft the text of those notices?

16 A. No, I did not.

17 Q. Who drafted those?

18 A. It was provided to me by Robert Steele.

19 Q. Do you think he drafted them?

20 A. I don't know.

21 Q. You don't know?

22 A. I don't know.

23 Q. You are aware, aren't you, that those notices ask people  
24 to make contact with Rightscorp to discuss the activity that is  
25 alleged in the notice?

1 A. Yes.

2 Q. And you are aware that people do that?

3 A. Yes.

4 Q. Do you have any involvement in that part of the process?

5 A. No.

6 Q. Are you aware that Rightscorp proposes revenue splits with  
7 ISPs?

8 A. It's not part of my business.

9 Q. That's what I was going to ask. Do you have any  
10 involvement in that?

11 A. No. No, I do not.

12 Q. Okay. Do you have any direct communication with ISPs?

13 A. Do I personally?

14 Q. Yes.

15 A. I have had a direct communication with an ISP.

16 Q. Which ISP?

17 A. I can't remember which one.

18 Q. Do you believe you have ever had direct communications  
19 with Cox?

20 A. I have never had direct communications with Cox.

21 Q. Mr. Boswell, where is your office?

22 A. Ventura, California.

23 Q. And are you the only Rightscorp employee in Ventura?

24 A. We have a system administrator in Ventura.

25 Q. And who is that?

1 A. Tim Yeomans.

2 Q. Do you actually have an office, or do you work from home?

3 A. No, it's an office.

4 Q. Okay. So it's just you and Tim in the office?

5 A. It's me and Tim at the office, yes.

6 Q. Where are the rest of the Rightscorp employees?

7 A. We have the group of employees that work with  
8 Robert Steele in Santa Monica, and we have possibly an employee  
9 in San Francisco.

10 Q. But Robert Steele is in Santa Monica?

11 A. Robert Steele is Santa Monica.

12 Q. Is Mr. Sabec in Santa Monica?

13 A. No. Mr. Sabec is in San Francisco.

14 Q. How many employees, if you know, are in the Santa Monica  
15 office?

16 A. I don't keep track. I don't know.

17 Q. 20?

18 A. I doubt it.

19 Q. You think less than 20?

20 A. Less than 20.

21 Q. More than ten?

22 A. You're asking me to speculate. I really do not keep track  
23 of who Robert has.

24 Q. Okay. Do you ever visit the Santa Monica location?

25 A. Oh, once a year.

1 Q. Once a year?

2 A. Basically.

3 Q. And that's about how often you interact with Mr. Sabec as  
4 well, right?

5 A. Yeah, about once a year also, yeah.

6 Q. And he is the CEO?

7 A. He is the CEO.

8 Q. But you have more frequent interactions with Mr. Steele;  
9 is that right?

10 A. Yes, Mr. Steele and I communicate.

11 Q. Do you report to Mr. Steele?

12 A. Yes, I do.

13 Q. Do you take your direction from him?

14 A. I take my business direction from him.

15 Q. Do you take business direction from anybody other than  
16 Mr. Steele?

17 A. No, I don't.

18 Q. And Mr. Steele testified that he creates what he called  
19 business rules and then you implement them in the code; is that  
20 right?

21 A. That would be correct.

22 Q. Are you ever asked to write code -- actually, let me ask  
23 it a different way.

24 Mr. Steele asks you to write a piece of code. You  
25 write it. Do you know how that code then is actually used in

1 operation?

2 A. Well, depends upon the type of code that he has asked.  
3 And he doesn't ask necessarily for a module. He asks for a  
4 result.

5 Q. Can you elaborate on that?

6 A. If he needed a -- you know, a view into the data that  
7 people would use, then I would write this view and put it up  
8 under the administration or wherever it needs to be put. Or --  
9 and if he needed to have us look in a specific direction for a  
10 specific thing or do research, that code may never -- may never  
11 leave my hands.

12 Q. Is it possible that you write code and then you don't know  
13 what, if anything, is done with that code? You hand it off and  
14 it may or may not be used in operation?

15 A. If it is standalone code, I may write it and it may never  
16 get used, but no one else will use it but me because it's  
17 standalone. If it's Web-based views in data, I -- once I put  
18 it up, if they don't use it, I don't know.

19 Q. How does Mr. Steele communicate business rules to you?

20 A. Telephone calls, sometimes e-mails.

21 Q. So there is some e-mail record of business rules?

22 A. There might be, yeah.

23 Q. I believe that you said in your deposition you didn't  
24 think there was any written -- business rules written down  
25 anywhere?

1 A. I said there might be. I don't recall. I would have to  
2 look.

3 Q. Do you know as you sit here?

4 A. I would not know if I sat here.

5 Q. But typically he communicates them orally; is that right?

6 A. Typically it's orally, yes.

7 Q. Is there any record of past business rules that have been  
8 in operation at Rightscorp anywhere? Is that memorialized some  
9 place?

10 A. Not on my end.

11 Q. Do you know whether it's memorialized anywhere else?

12 A. Wouldn't know.

13 Q. But the current business rules are reflected in the  
14 current code, right? If I wanted to know what the business  
15 rules are today, I would go look at the current version of your  
16 code?

17 A. Correct.

18 Q. Okay. And if I wanted to know what the business rules in  
19 place were in 2012, I would go look at the 2012 version of the  
20 code?

21 A. Could.

22 Q. But I can't do that, right?

23 A. No.

24 Q. I want to show you a document. This is a document that we  
25 have marked DTXSC 0243.

1           Mr. Boswell, can you take a look at that and tell me  
2 if you've seen it before?

3 A.     Absolutely.

4 Q.     I'm sorry?

5 A.     Yes, I have, sir.

6 Q.     Do you recognize that?

7 A.     Yes, I have.

8 Q.     Is this code that you wrote?

9 A.     This is HTML code that I have written, yes.

10 Q.    And this is code that controls how notices are sent to  
11 Cox; is that right?

12 A.    Yes, it does.

13           MR. BUCKLEY: I would like to put this up. Do you  
14 have any objection to us doing that?

15           MR. CARACAPPA: No, no objection, Your Honor.

16           MR. BUCKLEY: Thank you.

17           THE COURT: Go ahead. It's admitted.

18           MR. BUCKLEY: Thank you, Your Honor.

19           Can you zoom on the top part there, please, Michael.

20 BY MR. BUCKLEY: (Continuing)

21 Q.    So, Mr. Boswell, this is -- you said this is code you  
22 wrote and it controls notices sent to Cox. Do you see that  
23 language at the top there, "Maximum number of e-mails to send  
24 to Cox at a sitting," do you see that?

25 A.    Correct, yes.

1 Q. And you wrote that?

2 A. I wrote that.

3 Q. And then down at the bottom there, it looks like that's  
4 50,000; is that right?

5 A. Absolutely.

6 Q. So is it true that the process to send notices to Cox has  
7 to be run manually, right?

8 A. Yes.

9 Q. As opposed to the process you have for other ISPs where  
10 it's automated?

11 A. Yes.

12 Q. Why is the Cox process not automated?

13 A. The Cox process isn't automated because it became frozen  
14 in time.

15 Q. Can you elaborate on that?

16 A. We didn't change it mid-2014.

17 Q. I'm sorry?

18 A. It was not changed during -- it did not make the move to  
19 the automated processes with the rest of the e-mails.

20 Q. Oh, I see. So at some point you migrated from a manual  
21 process for all ISPs to an automated process for some; is that  
22 right?

23 A. Correct.

24 Q. But didn't migrate Cox?

25 A. Did not.



1 Q. Is that because Mr. Steele asked you not to?

2 A. I believe that it might have been.

3 Q. And does Mr. Steele have access to this control panel  
4 here?

5 A. He might.

6 Q. Do you know what a version control system is?

7 A. Yes, I do, sir.

8 Q. And you're familiar with different versions of -- or  
9 different types of version control, right, CVS, Subversion,  
10 Git, those are all version control programs?

11 A. Yes.

12 Q. And you've used programs like that, right?

13 A. Yes.

14 Q. In your own coding?

15 A. For projects I've worked on with big teams I have, yes.

16 Q. With -- I'm sorry?

17 A. So sorry. For projects I've worked on with teams of  
18 developers, I have used those.

19 Q. And some of those programs are free, right? They're open  
20 source, you can just go out on the Internet and grab them,  
21 right?

22 A. They're free, but they do have a cost to administer.

23 Q. Okay. But you don't have to pay to get them?

24 A. No, you do not have to pay to get them.

25 Q. Rightscorp doesn't use a version control system?

1 A. No, it doesn't.

2 Q. Never has?

3 A. Never has.

4 Q. Has there ever been any discussion at Rightscorp about  
5 using version control?

6 A. Not to my recollection.

7 Q. Do you ever recommend that Rightscorp should do that?

8 A. No, I did not.

9 Q. Has there ever been any discussion at Rightscorp about  
10 doing something else to preserve historical versions of the  
11 code?

12 A. I can't recall.

13 Q. I think yesterday -- and please correct me if I'm  
14 remembering this wrong. I think yesterday that you analogized  
15 the type of coding you do to word processing; is that right?  
16 Am I remembering that right?

17 A. The analogy I made was, if I recall, the -- the merging of  
18 the data from the database to the template is much like a mail  
19 merge for Word.

20 Q. Okay.

21 A. Okay.

22 Q. When you write the Rightscorp code, do you literally just  
23 sit at a computer and type it?

24 A. Within a tool called an integrated development  
25 environment, yes, I type the code.

1 Q. So if you wanted to keep versions of historical code, you  
2 could do that? There's nothing that prevents that, right?

3 A. Well, it is a -- there's nothing that prevents it, but  
4 there is a lot of overhead in the process.

5 Q. Okay. But you could do it?

6 A. It could be done.

7 Q. Do you document -- Mr. Boswell, do you document any of  
8 your development procedures? Is there a Boswell coding manual  
9 somewhere?

10 A. No, I'm -- I'm so sorry. No, I'm the only developer, so I  
11 don't document things for another development team.

12 Q. You understand a little bit about Rightscorp's business  
13 model, right?

14 A. To a certain extent, yes.

15 Q. And you understand that the data you collect is  
16 potentially going to be used in litigation?

17 A. Now we do, yes.

18 Q. Hasn't that always been the model, though? Wasn't that  
19 always a possibility, yeah.

20 A. There's lots of possible things in this world.

21 Q. And that's one of them; is that right?

22 A. That's a possibility.

23 Q. That the data might be used to sue somebody, right?

24 A. It's a possibility.

25 Q. I believe that you testified, and Mr. Steele confirmed

1 this, that in 2012 and 2013 a lot of the Rightscorp processes  
2 were performed manually. Is that right?

3 A. I don't --

4 MR. CARACAPPA: I object, it mischaracterizes the  
5 witness' testimony.

6 THE COURT: Sustained. Rephrase, please.

7 MR. BUCKLEY: Let me rephrase.

8 BY MR. BUCKLEY: (Continuing)

9 Q. Is it true that in 2012 -- let's start with 2012. Is it  
10 true that in 2012 a lot of the Rightscorp system, the processes  
11 were performed manually as opposed to automated?

12 THE COURT: It's pretty vague. Do you want to focus  
13 him on one area because the testimony wasn't a lot. It was  
14 focussed on -- I believe on one specific portion of the code,  
15 so --

16 MR. BUCKLEY: And I'm not characterizing any part --  
17 any testimony now, Your Honor. I'm just asking him.

18 THE COURT: Well, the problem is "a lot." So ask  
19 it -- a little more focussed question, if you would, please.

20 MR. BUCKLEY: Certainly.

21 BY MR. BUCKLEY: (Continuing)

22 Q. Mr. Boswell, in 2012 were there parts of the Rightscorp  
23 process that were performed manually?

24 A. Yes, there were parts.

25 Q. The same in 2013?

1 A. Yes, there were parts that were performed manually in  
2 2013.

3 Q. And the same in 2014, right?

4 A. We have an overview process in 2014 that has continued  
5 through. So, yes, the -- the manual overview or the manual  
6 checking still continues.

7 Q. And one of the things that used to be done manually was  
8 song verification, right?

9 A. Correct.

10 Q. And that was done by the folks in Santa Monica?

11 A. That is correct.

12 Q. That's not a process that you were involved in?

13 A. No, it's not.

14 Q. Do you recall when Rightscorp began using fingerprinting?

15 A. We never, for the purposes of songs, used fingerprinting  
16 internally. We've used third-party APIs that do  
17 fingerprinting.

18 Q. And that's AcoustID?

19 A. AcousticID and Audible Magic.

20 Q. Okay. When did you start doing that?

21 A. I believe late 2013.

22 Q. Do you know whether there's any documentation of the  
23 historical manual processes that were run?

24 A. Not in my wheelhouse, sir.

25 Q. You testified yesterday, Mr. Boswell, about I think what

1 you called the infractions table. You had that diagram and  
2 there's that database in the middle?

3 A. Yes.

4 Q. Do you refer to that as the infractions table?

5 A. If I stated that was the document, then, yes, it was.

6 Q. And what types of data are stored in that table?

7 A. I believe I enumerated it at the time.

8 Q. Could you remind me, please.

9 A. We have the infractionguid. We have the supplier's IP  
10 address. We have the supplier's port number. We have the  
11 torrent hash. We have the ISP. We have the owner's ID. We  
12 have the track name and the artist name. I might have said  
13 that already. We have the -- we have the file name, I believe.  
14 The date it was put in. Any date with regards to if it had  
15 been paid. Any information with regards to payment.

16 Q. Does it ever include people's names?

17 A. Yes, it does.

18 Q. Does it include their addresses?

19 A. If they provide them.

20 Q. Credit card information?

21 A. Last four digits. Last four digits.

22 Q. How would that information get into the infractions table?

23 A. People would pay online, and that's how it would get into  
24 that table.

25 Q. Do you know how it's used, that personal information once

1 it's -- that data, that personal information, how it's used  
2 once it's in there?

3 A. Not in my domain, sir.

4 Q. I believe you testified yesterday, Mr. Boswell, that there  
5 is a one notice per day rule where your system only sends out  
6 one notice per work per day; is that right?

7 A. One notice per work per day per IP port combination.  
8 Let's see. That's it, that should be it, yeah.

9 Q. And that was a business rule set by Mr. Steele, right?

10 A. Correct.

11 Q. Do you know when that went into effect?

12 A. 2012.

13 Q. Do you know when in 2012?

14 A. Late 2012.

15 Q. November?

16 A. Without checking the database, I wouldn't be sure.

17 Q. And how do you know that it was late 2012?

18 A. Because that was a change I needed to make, and I remember  
19 making it.

20 Q. You know there was a time when that was not the rule,  
21 right?

22 A. Correct, prior to that.

23 Q. And where multiple notices would go out in a single day  
24 for a single work and IP port combination?

25 A. That's true, yes.

1 Q. Thousands sometimes, right?

2 A. Thousands.

3 Q. You also testified yesterday, Mr. Boswell, about  
4 SampleIt2?

5 A. Yes, sir.

6 Q. That's the process that is used to actually go out and get  
7 samples of songs, right?

8 A. Yes, sir.

9 Q. I just want to make sure I'm understanding correctly.  
10 That's separate from the notice function in your system?

11 A. You are correct.

12 Q. So you can send a notice out without ever doing a sample?

13 A. That's correct.

14 Q. Can you do the opposite? Can you do a sample without  
15 sending a notice?

16 A. That has happened.

17 Q. Are they -- are they sequential? Does one occur before  
18 the other?

19 A. No, they're a parallel multithreaded process. They're  
20 independent of each other. One -- they both look at the  
21 database, and they both have histories, and they both run  
22 independently of each other.

23 Q. Thank you. We've also talked, Mr. Boswell, or we've heard  
24 about this 10 percent bitfield threshold issue.

25 A. Yes.



1 Q. And did you -- let me ask it a different way.

2 Mr. Steele made that decision to implement the  
3 10 percent bitfield, didn't he?

4 A. Yes, he did.

5 Q. And he asked you to develop that code?

6 A. Yes, he did.

7 Q. Did he tell you why?

8 A. Yeah. We were looking at large files that -- movie files  
9 that were having 80 and 90 percent bitfield loads when the  
10 actual full movie was there and more than enough for  
11 identification and verification was there.

12 Q. And we -- on your direct Mr. Caracappa showed you one of  
13 the files you actually wrote, correct?

14 A. Yes.

15 Q. And it had the December 2, 2014 date in it?

16 A. Yes.

17 Q. Did you actually write it on that date?

18 A. Yes.

19 Q. So --

20 A. It's a very short piece of code.

21 Q. Okay. And that's what I was going to ask. It's not  
22 possible that you started writing it a couple days later?

23 A. No. It was that quick. It's a very short piece of code.

24 Q. So that -- is that date in there, is that intended to  
25 indicate the date that the code was actually written?

1 A. That is what the database engine uses to indicate that the  
2 date -- the day it was written. And from that point forward,  
3 whatever time the events are to be fired is to be fired from  
4 that date and that point forward.

5 Q. Did you hard code that date in there?

6 A. No, the Microsoft -- or the MySQL engine generated date.  
7 I'm sorry. The MySQL, M-y-S-Q-L, engine put that data in  
8 there.

9 Q. Can that date be changed?

10 A. Oh, yes. But it wasn't.

11 Q. But it could be changed? Somebody could go in and type in  
12 a date?

13 A. It would have to be me.

14 Q. Are you the only person that could do that? No one else  
15 has access to that?

16 A. No one else has access to that.

17 Q. Not Mr. Yeomans?

18 A. Mr. Yeomans does, but he does not have the skills for  
19 that.

20 Q. But he's got access to it?

21 A. He has access to it, but he wouldn't know how to do it.  
22 He is not a MySQL or SQL programmer.

23 Q. And anybody at else at Rightscorp have access to it?

24 A. No one else has access to it.

25 Q. And the file that Mr. Caracappa showed you, the

1 FullFileFix.txt is a file that actually calls the stored  
2 procedure, which is FullFilesBeing.txt, right?

3 A. Correct.

4 Q. Okay. Which is -- sounds very technical, but I want to  
5 make sure I'm understanding it. So the one file basically runs  
6 what you've referred to as a stored procedure?

7 A. Correct.

8 Q. And the stored procedure is the 10 percent?

9 A. Is the 10 percent rule, yes.

10 Q. And that's a -- this is a -- these two files together,  
11 this is something that you can turn on and off, right? You can  
12 have it in operation at some points and then turn it off when  
13 it's not in operation any longer?

14 A. That is correct.

15 Q. Is it currently in operation?

16 A. No, it is not.

17 Q. And you said you turned it off in September, right?

18 A. Yes.

19 Q. Was it on when Rightscorp's code was produced to  
20 plaintiff's expert, Ms. Frederiksen-Cross?

21 A. I don't know what date that was.

22 Q. You can run that stored procedure, that 10 percent  
23 bitfield, you can run that manually too, right?

24 A. Yes, you can, but not before December 2, 2014.

25 Q. Okay. But the stored procedure, the 10 percent, it could

1 be automated, which is what the FullFileFix.txt does?

2 A. That's right.

3 Q. But you could also run that procedure manually?

4 A. Yes. And if you did, you would have to run it every  
5 15 minutes. So someone would have to sit at the computer every  
6 15 minutes and run that procedure because it only looks back a  
7 few minutes into the history. It's not a going back in time.  
8 It only goes back to that file time which only exists for  
9 24 hours.

10 Q. And we're talking right now about the current code, the  
11 code that you say you wrote in December?

12 A. No, I'm talking about -- we're talking about the  
13 FullFileFix in the stored procedure. The database -- the table  
14 that that worked on was -- it gets chopped every 24 hours. So  
15 it can only go back 15 minutes in that 24-hour period.

16 Q. Right. And I just want to make sure that you're  
17 testifying about the file that you said you wrote in December?

18 A. Yes.

19 Q. You know who Ms. Frederiksen-Cross is?

20 A. Yes, I do.

21 Q. And you've interacted with her, right?

22 A. Yes.

23 Q. And you know that she retained some portions of the 2013  
24 version of your code?

25 A. Yes, I do.

1 Q. Including the Test5.java file?

2 A. Yes.

3 Q. And that's the file that actually goes out and actually  
4 collects data from bitfields, right?

5 A. That's the file that actually goes out, and it would be  
6 the infringement bot and the Infringement Finder, and that's  
7 the one that goes out and does the handshake, communicates,  
8 brings the bitfield back, and sends it back to the system.

9 Q. And you testified in your deposition that that prior  
10 version of Test5 was comparable with the 10 percent bitfield,  
11 right?

12 A. Sir, the 10 percent bitfield is a post-process that was  
13 developed in December of 2014. There is no code in there.  
14 It's a hundred percent bitfield. There's not a 10 percent  
15 bitfield in any of the Test5 code.

16 Q. Had there been a 10 percent bitfield program in place in  
17 2013, though, it would have worked with the older version of  
18 Test5?

19 A. Are you saying that -- can you rephrase your question,  
20 sir?

21 Q. Sure. Had there been a 10 percent bitfield program in  
22 2013, it would have worked with the 2013 version of Test5?

23 A. Yes, it would have.

24 Q. And is it your testimony that there's no port -- let's  
25 stay focused on the 2013 version of Test5. And, actually, I

1 think yesterday you said that it really hasn't changed very  
2 much, right?

3 A. No.

4 Q. Is it your testimony that there's no portion of that Test5  
5 file from 2013 that's only there to be compatible with the 10  
6 percent bitfield?

7 A. I don't understand your question, sir.

8 Q. Is there any part of the historical Test5 file that has  
9 only one purpose, which is to be compatible with the 10 percent  
10 bitfield?

11 A. I don't understand your question.

12 Q. What's confusing about that?

13 A. I don't understand the connection.

14 Q. Is there --

15 MR. CARACAPPA: Your Honor, the witness doesn't  
16 understand.

17 MR. BUCKLEY: Let me rephrase.

18 THE COURT: He's rephrasing it.

19 BY MR. BUCKLEY: (Continuing)

20 Q. The 2013 version of Test5 --

21 A. The 2013 version of Test5.

22 Q. Is there anything in that file, the Test5 file or the  
23 Test5 module, that only exists in order to be compatible with  
24 the 10 percent bitfield program?

25 A. The 10 percent bitfield program, which was developed in

1 December of 2014, looks on the -- looks at the bitfield  
2 information that all the infringement bots have ever sent back  
3 and does a post-process on it.

4 Q. Okay, which is not responsive to my question. What I'm  
5 wondering is, is there anything in the 2013 version of Test5  
6 that is only there in order to be compatible with a 10 percent  
7 bitfield program? If the answer is no, say it's no.

8 A. The answer is no then.

9 Q. And the effect of the 10 percent bitfield threshold,  
10 Mr. Boswell, is to change how your system identifies an alleged  
11 infringer, right?

12 A. It changes the notice, at what point the notice is sent.

13 Q. And more notices go out, right?

14 A. In that case, yes.

15 Q. And as you noted in your deposition, the more e-mail that  
16 goes out, the more you get paid?

17 A. Did I say that in my deposition?

18 Q. Yes, you did. Do you remember that?

19 A. No, I don't.

20 Q. Is that right?

21 A. Well, it's not a one-to-one correlation, but the more  
22 e-mails that go out, the more likely you are that someone will  
23 pay.

24 MR. BUCKLEY: Thank you. Nothing further, Your  
25 Honor.

1 THE COURT: All right. Redirect?

2 MR. CARACAPPA: Your Honor, just a few questions on  
3 redirect.

4 REDIRECT EXAMINATION

5 BY MR. CARACAPPA:

6 Q. Thank you, Mr. Boswell.

7 A. You're welcome.

8 Q. You talked a little about revision control and how you  
9 have used it in the past. Do you recall that testimony?

10 A. Yes, sir.

11 Q. And I believe you stated you used it on big teams. Can  
12 you explain that answer in more detail, please, to the jury.

13 A. Well, revision control software is really collaboration  
14 software. It allows multiple people to work on the same  
15 project together. Much like Google now has those web-based  
16 Google documents where four or five people can type on the  
17 Google document at the same time and it all -- puts them  
18 altogether.

19 So revision control is needed when you have more than  
20 one developer working on the same code at the same time. That  
21 way if one developer is going to work on a code, he can lock  
22 that piece of code so no one else can touch it while he works  
23 on it. And when he gets done working on it, he can unlock that  
24 piece of code and then everyone else can see his changes and  
25 work through.



1 But I am the only developer in the system, so there  
2 is no point in revision control.

3 Q. The revision control, Mr. Buckley stated that there were  
4 some free versions. Do you recall that?

5 A. Oh, absolutely.

6 Q. What, if any, problems are you aware of with those free  
7 versions regarding security?

8 A. Oh, absolutely. On the GitHub, which is one of the most  
9 popular version -- free version control systems where they  
10 actually administer the version for you, on their security site  
11 they specifically say that any data posted in here should be  
12 considered compromised. In other words, anything that you post  
13 that has a user name, a password, or important code, you should  
14 consider that compromised.

15 Now, GitHub is great for open source projects where  
16 people like to share what they've done and show off what  
17 they've done and there's no intellectual property that you have  
18 to worry about. But if you have a company where you have  
19 intellectual property that you have to worry about, the fact  
20 that they indicate that anything you post up there is  
21 compromised, will violate your intellectual property.

22 And with regards to Subversion and CVS, you do need a  
23 system -- an administrator of those pieces of code who is  
24 up-to-date on all the latest security challenges. The  
25 web-based version of CVS and of Subversion, they have security

1 holes and issues. And whoever runs those has to make sure that  
2 they are up-to-date on the latest versions of that.

3 Q. When, if ever, during the relevant time period did Cox ask  
4 to see the Rightscorp code?

5 A. Never to my knowledge.

6 Q. When, if ever, during the relevant time period did Cox  
7 ever question the accuracy of the Rightscorp code?

8 A. Never to my knowledge.

9 Q. Do you have an understanding as to whether Cox is willing  
10 to accept the Rightscorp notices if they remove the settlement  
11 language?

12 A. Outside of my wheelhouse.

13 MR. CARACAPPA: Thank you, Your Honor. No further  
14 questions.

15 THE COURT: All right. May Mr. Boswell be excused?

16 MR. CARACAPPA: We will reserve the right to recall  
17 him in our rebuttal case if necessary, Your Honor.

18 THE COURT: All right. Mr. Boswell, you are done for  
19 now. Thank you, sir. You are subject to recall. Please don't  
20 discuss the testimony you've given with any of the fact  
21 witnesses who have not testified so far. All right, sir?

22 THE WITNESS: Thank you, Your Honor. Yes, sir.

23 THE COURT: All right. Have a good day.

24 NOTE: The witness stood down.

25 THE COURT: All right, next witness.

1 MR. CARACAPPA: Thank you, Your Honor. Plaintiffs  
2 call Dr. Robert Bardwell.

3 NOTE: The witness duly affirms.

4 ROBERT BARDWELL, called by counsel for the plaintiff,  
5 first duly affirming, testifies and states:

6 DIRECT EXAMINATION

7 BY MR. CARACAPPA:

8 Q. Dr. Bardwell, good morning.

9 A. Good morning, Mr. Caracappa.

10 Q. Can you please state your full name for the record.

11 A. Robert Bardwell.

12 Q. Where do you live?

13 A. Denver, Colorado.

14 Q. What is your profession?

15 A. I'm a statistical consultant and also a software  
16 developer.

17 Q. And what do you do as a statistical consultant and  
18 software developer?

19 A. As a statistical consultant I typically receive data from  
20 clients, and examine the data on a lot of different subjects,  
21 and provide them the service of understanding how they can  
22 analyze the data, what kind of information they can get from  
23 it, and what kind of confidence they can have from that  
24 information.

25 Q. And can you tell the jury about your educational

1 background.

2 A. I have a BA in philosophy and a Ph.D. in mathematical  
3 statistics.

4 Q. Can you please describe your employment history.

5 A. Well, prior to my Ph.D. I worked for over ten years with  
6 my father. He was also a mathematician and had a consulting  
7 business. And I typically did computer programming for him in  
8 his statistical analyses.

9 I received my Ph.D. in 1989 and started my own  
10 consulting company, initially with my father for a few years.  
11 And then I've worked in that business since then. And often  
12 developed software.

13 And then about eight years ago I started another  
14 company that develops software that's distributed nationally  
15 that analyzes energy use in buildings.

16 Q. And what do you do currently?

17 A. Both of those businesses. So I run Bardwell Consulting  
18 and also the software company.

19 Q. And what is Bardwell Consulting?

20 A. Bardwell Consulting is a statistical consulting firm.

21 Q. And how many employees does it have?

22 A. It varies, but approximately ten.

23 Q. And can you describe the roles and responsibilities of  
24 some of those employees?

25 A. We have staff that works in administration and

1 bookkeeping. We have a number of people who do routine  
2 research, report drafting and editing, production. And we have  
3 several Ph.D. economists and Ph.D.s in other areas to do  
4 analyses and write computer codes, do statistical analyses in  
5 different computer packages.

6 Q. And how long have you been involved in statistical  
7 analysis and probabilities?

8 A. About 35 years, including the work with my father.

9 Q. Can you explain some of the work that Bardwell Consulting  
10 and you have done.

11 A. Well, so I -- a few cases that are most relevant here, I  
12 developed the software that the U.S. Department of Interior  
13 uses to monitor all federal gas, mineral, and oil leases. So  
14 they are responsible for collecting royalties for us, the  
15 citizens of the United States. And I developed the software  
16 that identifies underpaying leases and provides a measure  
17 that's presented to Congress every year of how good a job  
18 they're doing collecting royalties.

19 And that's particularly relevant because it involves  
20 identifying underpaying leases, what's the signature of a lease  
21 that is underpaying. And these are hundreds of thousands of  
22 dollars that are at stake.

23 For the Federal Election Commission, I developed the  
24 software that they use -- all the auditors across the country  
25 use on their laptops. And then they have the same software on

1 their main frames in Washington, D.C., and it -- they use that  
2 software to monitor all federal elections. And they use  
3 that -- they just called us because we do regular updates of  
4 that software for them. And that software also is used to  
5 identify campaigns that are out of compliance.

6 Another interesting kind of fingerprinting exercise  
7 was I was hired by the Boulder Police Department. They had a  
8 very high-profile murder case that had gone cold. It was about  
9 ten -- over ten years old, where I think Robert Redford's  
10 daughter's boyfriend was shotgunned to death, and they had  
11 never been able to conclusively link the shotgun evidence at  
12 the murder scene with a shotgun shell they'd found in the vest  
13 of the suspect.

14 And I developed a kind of fingerprinting technique  
15 that matches the alloys -- the specific -- there are lots of  
16 pellets in a shotgun shell, and each little pellet has  
17 different alloys in it, alloys of arsenic and lead and zinc, a  
18 bunch of different metals. And I matched the mix of those  
19 pellets in -- at the murder scene to the mix of the pellets in  
20 the vest of the -- the hunting vest of the suspect.

21 And so, they reopened the case.

22 Q. Dr. Bardwell, in approximately how many cases have you  
23 been retained as a statistician?

24 A. Approximately 100.

25 Q. Can you please turn to DTX 3351.

1 A. I see, yes.

2 Q. And are you familiar with DTX 3351?

3 A. This appears to be my CV.

4 Q. Is it a fair and accurate copy of your CV?

5 A. Yes, it's the one I submitted with my initial report.

6 MR. CARACAPPA: Your Honor, at this time we'd like to  
7 move into evidence DTX 3351.

8 THE COURT: Any objection?

9 MR. WAKEFIELD: Subject to the parties' agreement  
10 that the experts' CVs on both sides are coming in, no  
11 objection.

12 THE COURT: All right. It is received.

13 MR. CARACAPPA: Thank you, Your Honor. At this time  
14 we'd like to credit Dr. Bardwell as an expert in statistics and  
15 probability modeling.

16 THE COURT: Any objection to that?

17 MR. WAKEFIELD: I don't know that there's a  
18 foundation laid on probability modeling, in particular. I have  
19 no objection on statistics.

20 THE COURT: All right. Well, let's see what  
21 questions are asked about the -- in the probability area. Are  
22 your going to ask questions about the probability of some of  
23 the opinions he has?

24 MR. CARACAPPA: Yes, Your Honor, I will.

25 THE COURT: All right. Then qualify him for that.

1 BY MR. CARACAPPA: (Continuing)

2 Q. Dr. Bardwell, are you familiar with probability models?

3 A. Yes. So my Ph.D. was in mathematical statistics. So  
4 statistics is really a bunch of -- a tool kit that's used to  
5 analyze data, and the foundation of statistics is probability  
6 theory. Because you need probability theory to say, well, if I  
7 have this much data, with this type of information, and I  
8 compute the average or the mean or some other value, what is --  
9 what confidence can I have in that result. And that confidence  
10 is a measure of probability.

11 So my actual, my training is not in -- is  
12 primarily -- mathematical statistics means I was trained to  
13 design new statistics.

14 So for instance, my Ph.D. is in the asymptotic  
15 behavior of certain maximal likelihood estimators under mild  
16 regularity conditions, which is essentially developing new  
17 statistics using probability theory. So I have extensive  
18 training in probability theory.

19 And in addition, the -- for instance, of the examples  
20 I gave, the modeling for the Boulder Police Department was  
21 exclusively a probabilistic model.

22 And I have also done modeling of the probabilities  
23 for the Colorado lottery and for casino games. Casino games --  
24 you may not know it, but a casino game cannot be publicly used  
25 in casinos unless the probabilities of winning are precisely



1 calculated so that there isn't undue risk to the house losing  
2 money or to the players that they lose too much money. And  
3 so --

4 Q. Can you describe for the jury the probability model that  
5 you prepared for the Colorado lottery.

6 A. Yeah. So I worked with that on my father's -- with my  
7 father. He designed the first -- we designed the first  
8 probability model for that lottery. And that was actually --  
9 that was back in the day, and the model that we worked on just  
10 for kind of -- it made a good TV moment was a bunch of a balls  
11 in an urn and we were involved.

12 And he -- so I did the computer programming to test  
13 that the results of the churning of the balls in the urn and  
14 the picking of the numbers for this -- I think it was a six  
15 number lottery -- were appropriately random.

16 THE COURT: He's qualified to speak on the  
17 probability issues as well. Go ahead, Mr. Caracappa.

18 MR. CARACAPPA: Thank you, Your Honor.

19 BY MR. CARACAPPA: (Continuing)

20 Q. Dr. Bardwell, what were you asked to do in this case?

21 A. So in this case I received a massive amount of data. So  
22 for most people that sounds boring, but for a statistician,  
23 this is like a gold mine.

24 So what we received were initially 15 million --  
25 almost 15 million records of Internet infractions. This is the

1 Rightscorp data that we've been talking about. And also a list  
2 of asserted songs, copyrights that were found in that data.

3 And I was asked to determine -- you know, on face  
4 value you see that there are multiple infractions, lists,  
5 records in that data associated with a given IP address. So  
6 that's like your house address. So it looks like this address  
7 day after day was sharing songs on the asserted copyright list.

8 And my job was to say, so that looks like repeated  
9 infringements on an IP address. Can we actually be sure that  
10 those are repeated infringements by one Cox account.

11 Q. And what was your conclusion?

12 A. Over, approximately -- well, my conclusion. So there's --  
13 I need a little background. So we decided to use a very high  
14 standard of proof. So we could say, well, what is it -- is it  
15 more likely or not that they were one account? That would be  
16 50/50. We didn't do that.

17 We said -- we only considered accounts verified,  
18 meaning a sequence of infringements were verified to be  
19 attributable to one account if the probability was over  
20 95 percent that they were attributable to one account.

21 And under that stringent level of verification,  
22 approximately 96 percent of all infringements can be associated  
23 with repeating infringements on an account.

24 Q. Dr. Bardwell, can you please look in your witness binder  
25 at PXS 1?

1 A. Yes.

2 Q. And what is this document?

3 A. This is a list of the asserted songs in this case.

4 Q. And how, if at all, was this document used in your  
5 analysis?

6 A. So as I mentioned, to conduct the analysis, we needed  
7 essentially the massive database of repeat infringements or  
8 infractions from Rightscorp, and then we needed this list of  
9 asserted songs.

10 Q. So your analysis was based on the copyrights that are at  
11 issue in this case; is that right?

12 A. That's correct.

13 Q. Can you look at PDX 4? Right now I would just like to  
14 draw your attention to the first page of PDX 4.

15 A. Yes.

16 Q. Have you seen the first page of PDX 4 before?

17 A. Yes.

18 Q. And what is it?

19 A. This is a small example from the Rightscorp data.

20 MR. CARACAPPA: Your Honor, this is an excerpt from a  
21 document that is already into evidence. I believe it's okay to  
22 show to the jury and the witness.

23 THE COURT: All right. Any objection?

24 MR. WAKEFIELD: This is this one?

25 MR. CARACAPPA: Yes.

1 MR. WAKEFIELD: No objection, Your Honor.

2 THE COURT: All right. It is received.

3 BY MR. CARACAPPA: (Continuing)

4 Q. Okay. Dr. Bardwell, can you talk about the information  
5 that's at the first row of the first page of PDX 4.

6 A. Certainly. So everything I have talked about in terms of  
7 data, this is where it starts. So this is what we -- what I  
8 have received.

9 So the first row -- and every row of the file lists  
10 the IP address for the infraction. So every row relates to an  
11 event where a song was shared. It is called an infraction or  
12 an infringement.

13 The IP address involved is listed on the first field.

14 The ISP is listed. That is always Cox in this  
15 database.

16 The Song Title, Artist, Song Owner, and the File  
17 Name, all four of those were used to identify the specific song  
18 that was shared.

19 And then going back in the middle is the Date. And  
20 you can see that's actually recorded down to the second. So it  
21 is a precise minute that the exchange, the offer of that song  
22 being available was communicated.

23 And then the Port. So the port is kind of like -- if  
24 the IP address is your address, the port is maybe if you're  
25 living in your apartment building, the port is your apartment

1 number.

2 So together they allow the Internet to deliver the  
3 data. So together they also identify the node on the Internet  
4 that was sharing the song.

5 And then the E-Mailed Date. Every one of these  
6 records is a record that was also associated within an e-mail.  
7 So it also provides the e-mail date.

8 And the hash.

9 Q. So right now we're just talking about the data that you  
10 analyzed. In the data that you analyzed, we talked about the  
11 copyrights at issue and the notices sent to Cox during the  
12 relevant time frame; is that right?

13 A. That's correct. So this is a list of the notices.

14 Q. This is a list of the notices?

15 A. Yes, of the e-mails. Right.

16 Q. Thank you. Dr. Bardwell, can you look at PX 1630.update,  
17 please.

18 A. Yes.

19 Q. Dr. Bardwell, what -- are you familiar with this document?

20 A. Yes, I am.

21 Q. And what is this document?

22 A. So if you imagine that the database we just looked at --  
23 so there would be several ways to tally that data. So one way  
24 I could tally it would be -- like this table is built. And  
25 this says for each song that occurs in that database that is

1 being shared, how many times was it shared and so forth.

2 So if we just look at the first row --

3 Q. I will pull it up in a minute.

4 A. I am sorry. I got ahead of myself.

5 Q. Do you have an understanding of how this document was  
6 created?

7 A. I do. So this -- that's what I was describing. This  
8 document would be created by scanning through that table and  
9 identifying or counting every time a song -- a certain song was  
10 shared and how many IP addresses it was shared on.

11 Q. And how was that done?

12 A. By computer. So my team would draft, develop programming  
13 to load the data and then match the song, the asserted song  
14 list to the list of infractions. And then with that data we  
15 could say, all right, for the first song, count how many rows  
16 occur in the database and how many separate IP addresses occur.

17 Q. Is it common to have a team help with an analysis of data,  
18 such as the data provided to you by Rightscorp?

19 A. If we didn't have teams working on computer programming,  
20 we wouldn't get much done. It's a very time consuming process,  
21 yes.

22 MR. CARACAPPA: Your Honor, I would like to move into  
23 evidence PX 1630.update.

24 THE COURT: Any objection?

25 MR. WAKEFIELD: No objection, Your Honor.

1 THE COURT: It is received.

2 BY MR. CARACAPPA: (Continuing)

3 Q. All right. Dr. Bardwell, let's explain exactly what  
4 information is in this document.

5 A. Yeah. I'm going to just take the second row because I am  
6 not sure how to pronounce the first song.

7 Q. Okay.

8 A. But the second song, I think Gorilla, I am sure how to  
9 pronounce that. And so the first number is the copyright  
10 number.

11 The second column indicates the Song Title.

12 Song Owner. We saw those in the other database.

13 So essentially now I can -- I have identified a song  
14 that I can -- I have picked a song that I can identify in that  
15 list of infractions.

16 So the middle column, Infractions, I would count how  
17 many rows in the Rightscorp data occur for that song. So how  
18 many times it was shared.

19 So there is 25,359 infractions or rows in the  
20 Rightscorp data where that song occurs. And those sharing  
21 events occurred for 6,239 different IP addresses.

22 And the first date. The first date -- begdate is  
23 beginning date. The first date that we see that song shared is  
24 February 12, 2013.

25 And the last date we see it shared is November 25,

1 2014.

2 Q. Dr. Bardwell, I would like you to turn to PX 1634.update.

3 A. Yes.

4 Q. Are you familiar with this document?

5 A. I am.

6 Q. And what is this document?

7 A. So another way that we could total that massive  
8 database -- so what I just described was scanning through it  
9 for collecting all the records for a given song. But another  
10 way I could do it is scan through it and collect all the  
11 records for a given IP address.

12 So the first table looked at how are the infractions  
13 organized by song. This table looks at how are these  
14 infractions organized by IP address.

15 Q. And are you familiar with how this document was prepared?

16 A. I am.

17 Q. Could you please explain how this document was prepared.

18 A. So our team -- my team wrote a computer program to scan  
19 through the data, identify all the records associated with the  
20 given IP address, and count the infractions, and collect all  
21 the songs that were shared by that IP address.

22 MR. CARACAPPA: Your Honor, at this time I would like  
23 to move into evidence PX 1634.update.

24 THE COURT: Any objection?

25 MR. WAKEFIELD: No objection, Your Honor.



1 THE COURT: It is received.

2 BY MR. CARACAPPA: (Continuing)

3 Q. Okay. Dr. Bardwell, would you mind going over a row of  
4 this table as well, please.

5 A. Yes. Yeah, it's really small. I'm sorry.

6 Q. We will blow it up so you can see it on the screen.

7 A. Yeah, I can see it well enough. I am just concerned about  
8 the jury.

9 But anyway, the first column is the IP Address. So  
10 we pick a specific IP address. And then we are going to comb  
11 through the whole title and find every row, every infraction on  
12 that IP address.

13 This first IP address had -- maybe I can't read it --  
14 650 total infractions. And that involved -- all of those  
15 infractions involved 15 songs.

16 So one thing you can see here is that people tend to  
17 share the same songs over and over again. 650 times, but only  
18 15 songs.

19 The beginning date is February 9, 2014.

20 The last date they shared a song was April 23, 2014.

21 And then there is a beginning and ending e-mailing  
22 date.

23 So this is important in my -- the last -- the middle  
24 column is very important in my analysis. That's the Port.

25 You can see -- if you just scan down this table --

1 well, you can't see. Most people only have one port. So  
2 that's important because that is a strong indicator of the  
3 stability of the assignment of the IP addresses.

4 And also at the last column lists the name of every  
5 song that they shared.

6 Q. Thank you. So, Dr. Bardwell, right now we have just  
7 talked about the data. What were you asked to do with this  
8 data?

9 A. So the reason a probabilist like myself was involved was,  
10 as I described initially, because IP addresses are used to  
11 direct traffic, they are assigned typically to an Internet node  
12 for a period of time. So you can think of that as an address.  
13 However, the automated systems in -- that route Internet  
14 traffic do change the assignment of IP addresses occasionally.

15 So the question is -- that was posed to me was, can  
16 we have a high level of confidence -- or can we identify when  
17 we have a high level of confidence that a sequence of repeated  
18 infractions on an IP address can in fact be assigned,  
19 attributed to one Internet account.

20 Q. And how did you approach determining whether the sequence  
21 of infractions could be attributed to one account?

22 A. So I developed a probability model. And it's called a  
23 Markov model from a great Russian mathematician. But -- and  
24 it's a model that is quite familiar to all of us, although the  
25 way the model is fully developed for this case is quite a -- I

1 think quite a work of art, actually. It was a lot of fun  
2 building this.

3 But the -- flipping a coin is a Markov model. So  
4 Markov models are just memory list sequences of events. So the  
5 coin doesn't know -- it doesn't care that the last flip was a  
6 head or a tail. So you flip the head and tail and you get a  
7 Markov chain.

8 The sequence of these infractions are commonly  
9 analyzed as a Markov chain or Markov model. So I built a  
10 Markov model that -- and when using the -- you know, leveraging  
11 all this rich data from Rightscorp, I could build a model that  
12 understands the processes involved and the patterns involved in  
13 the data, and can compute the probability that two sequential  
14 infractions are associated with the same account.

15 Q. You have said a couple times the rich data and then you  
16 said how much fun you had building this model. Can you explain  
17 that to the jury, please.

18 A. Yeah. I mean, when I have a new client, the first thing I  
19 ask them is, send me a sample of your data or your data, if it  
20 is not too voluminous, because that's where the rubber hits the  
21 road for a mathematician or a statistician.

22 And, you know, frankly, in 30 some years of doing  
23 this, I have never had this rich a data set, or this accurate.  
24 Because the data, as we just heard Mr. Boswell testify, is  
25 generated by a computer program.

1           So most data that I analyze is -- has human  
2 intervention in its creation. So there is -- frequently a lot  
3 of time is spent correcting the data or adjusting for  
4 inaccuracies in the data. And this -- I had 15 million records  
5 of computer-generated data with very interesting patterns. So  
6 it was a real opportunity and a treat to analyze.

7 Q.    Thank you, Dr. Bardwell. Can you please turn to PDX 4  
8 page 2.

9 A.    Yes.

10 Q.   And have you seen this before?

11 A.    I have.

12 Q.   And explain what this is, please.

13 A.    Yes. This is just -- so we looked at the whole table and  
14 it had a mix of IP addresses, records, you know, one after the  
15 other, but not sorted.

16           So this sample is just picking a sequence of repeated  
17 infringements on two specific IP addresses.

18           MR. CARACAPPA: I don't think there is an objection  
19 to this slide; is that right?

20           MR. WAKEFIELD: That's correct.

21 BY MR. CARACAPPA: (Continuing)

22 Q.    Okay. Dr. Bardwell, can you explain your analysis with  
23 respect to the information that is on this screen now.

24 A.    So in order to apply the Markov model to the data, I had  
25 my team develop a program that would group all of the

1     infractions for each IP address. And then -- and so each of  
2     these little tables are, you know, kind of a sample -- they are  
3     a sample, I think, of actual data from the Rightscorp data from  
4     two IP addresses. So I'm just going to talk a little bit about  
5     how the model would look at this sequence.

6             So for sequence one you can see that the IP address  
7     is the same. That's how we gather up this sequence of events.  
8     And there is three important -- besides the fact that the IP  
9     address is the same, there's three other important factors.  
10    One is you can see that the sharing starts on February 9 and  
11    ends on February 25. So that the cluster of sharing events are  
12    relatively close in time, and that's an important factor in  
13    leading to a higher probability that they are all due to one  
14    account.

15            Also, during each of the five events, the same two  
16    songs are shared. Now, this can be an extremely important  
17    factor because, in fact, most -- the combination of most -- of  
18    songs that are shared by most IP addresses are extremely rare.

19            So they become like the shotgun shell evidence, a  
20    telltale fingerprint of that IP address, that account, sharing  
21    the same songs day after day.

22            And likewise, the port is the same. And this is a  
23    common port, but there are -- most ports -- there is over  
24    60,000 ports, most ports are extremely rare also.

25            So together the songs and the port are a very

1 telltale fingerprint of the sharing pattern for a sequence of  
2 infringements.

3 Q. Dr. Bardwell --

4 A. And --

5 Q. No, continue.

6 A. Well, the second table can be explained in the same way.

7 Q. Okay. Thank you.

8 Dr. Bardwell, what is the probability that an IP  
9 address associated with an infringement, according to your  
10 model, was attributable to a single account?

11 A. Can you repeat your question?

12 Q. Sure. What is the probability that the IP address  
13 associated with the infringements was attributable to a single  
14 account?

15 A. So in this first sequence here, I don't have the specific  
16 number for this, but most accounts -- remember, I told you that  
17 we only said they were verified and consider them verified if  
18 they had a probability of being attributable to one account  
19 that was over 95 percent.

20 But most IP addresses, sequence of infringements, the  
21 probability that they are one account is on the order of .9999,  
22 almost 1. And that's because of the type of pattern we are  
23 seeing here. Most accounts have repeated sharing of a very  
24 unique set of songs over a very rare port.

25 Q. And the probability of a .9999, is that 99.9999 percent?

1 A. Yes, it is.

2 Q. Okay. Thank you.

3 Dr. Bardwell, could you please look at PDX 4, page 3.

4 A. Yes.

5 Q. And what is this document?

6 A. This document is a very simple summary of the findings  
7 from our analysis.

8 Q. And how was this summary prepared?

9 A. This was also prepared by a computer program that I  
10 instructed my team to develop.

11 Q. Okay.

12 MR. CARACAPPA: Your Honor, I would like to show on  
13 the screen page 3.

14 THE COURT: Any objection?

15 MR. WAKEFIELD: Your Honor, this is one where we had  
16 an objection on the basis that this was a new analysis not  
17 disclosed under Rule 26.

18 THE COURT: Well, let's approach side-bar then.

19 NOTE: A side-bar discussion is had between the Court  
20 and counsel out of the hearing of the jury as follows:

21 AT SIDE BAR

22 THE COURT: So I was delighted that I didn't hear  
23 from you this morning about this, and I thought it had all been  
24 worked out. But I guess not.

25 MR. WAKEFIELD: So in the Rule 26 disclosure there

1 was a summary of this, verified IP address --

2 MR. GENNARI: That's the wrong one.

3 MR. WAKEFIELD: I'm sorry, this is -- I believe it's  
4 been -- oh, sorry. Let me go to the new one. We got two of  
5 these the night before last.

6 MR. CARACAPPA: Okay. But you got two because we  
7 incorporated your changes into one of them. So we tried to  
8 address some of your concerns, so we sent you another one. It  
9 doesn't matter.

10 MR. WAKEFIELD: So talking about PDX 0004, the final  
11 page. It's a summary of the verified IP address associated  
12 with multiple infractions. As I understand, it's an update to  
13 a conclusion that had been disclosed in the report. This was  
14 sort of the crux of his opinion about verified accounts, and it  
15 has gone down because the number of works is down.

16 The IP address associated with at least one  
17 infraction number I don't think was ever one of his conclusions  
18 or stated in his report. And tying the number of infractions  
19 to that isn't something that I saw in his report.

20 MR. CARACAPPA: So that's not entirely true. So what  
21 happens is Dr. Bardwell is here to verify infringements that  
22 occur on more than one account.

23 THE COURT: Okay.

24 MR. CARACAPPA: Right? So that number was about  
25 62,000. He was able to verify that for those accounts that had



1 multiple infringements, 60,000 of them were verified.

2 THE COURT: Okay.

3 MR. CARACAPPA: This difference can be explained

4 because 42,000 of the accounts have one infringement.

5 Therefore, they never needed to be verified.

6 So while he doesn't talk about this number, the  
7 number is relevant and explains, okay, I got -- had 104, I took  
8 these out because --

9 THE COURT: So this is just a subtraction of 104 from  
10 60?

11 MR. CARACAPPA: It's a subtraction of 104 from 60, if  
12 you have to add back in the nonverified accounts, and then this  
13 number, and then you get back up there.

14 THE COURT: Okay.

15 MR. CARACAPPA: So it's really just data. It isn't  
16 even really an opinion.

17 THE COURT: It wasn't in his Rule 26 report, that  
18 number?

19 MR. GENNARI: Can I add something?

20 THE COURT: Yes.

21 MR. GENNARI: That data is in the spreadsheets that  
22 he produced. It's just a compilation of some rows -- in  
23 addition to how many rows there were.

24 MR. WAKEFIELD: There is thousands of rows of data,  
25 he's doing new comparisons.

1 THE COURT: All right. I'm going to allow the  
2 testimony. Your exception is noted.

3 MR. WAKEFIELD: Thank you, Your Honor.

4 MR. CARACAPPA: Thank you, Your Honor.

5 NOTE: The side-bar discussion is concluded;  
6 whereupon the case continues before the jury as follows:

7 BEFORE THE JURY

8 THE COURT: Please proceed.

9 BY MR. CARACAPPA: (Continuing)

10 Q. Dr. Bardwell, can you please explain the summary of the  
11 information that's on the screen for the jury.

12 A. Yes, definitely. So this is a pretty simple table just  
13 reporting the overall results. So scanning the Rightscorp  
14 data -- now, this is only for asserted song rights -- asserted  
15 songs in this case. There are a total of 104,090 different IP  
16 addresses sharing songs on that database -- for asserted songs  
17 on that database. And they have songs listed, they're sharing  
18 is listed in 1,847,516 rows of that data. So that many  
19 separate sharing events.

20 And of these, 42,790 of the IP addresses only occur  
21 on one I date. So the whole analysis -- the Markov model isn't  
22 needed there to show that there's repeated infringements,  
23 they're obviously only one account because it only occurred at  
24 one point in time.

25 But they share more than one song, on average about

1 three songs each. So the total number of infractions is  
2 132,704. So those 42,790 IP addresses shared 132,704 songs.

3 So the reason I was hired is to determine if the bulk  
4 of the infractions shared by the remaining IP addresses --  
5 which there they have repeating infractions on sequential days,  
6 can we confirm -- does the probability model show that at  
7 95 percent confidence those are attributable to a single  
8 account.

9 For 60,706 of those, we can verify those accounts at  
10 95 percent probability. And those accounts are responsible for  
11 1,640,416 infractions.

12 Q. Okay. Dr. Bardwell, what, if anything, did you do to  
13 verify the accuracy of the model you created to determine  
14 whether an IP address was verified?

15 A. Well, two -- a lot of different things. But I mean -- so  
16 we -- this model was in development over months and, as I said,  
17 the data was very rich. So the initial model development was  
18 preceded by, I don't know, you know, probably hundreds and  
19 hundreds of hours of research into what would be the  
20 appropriate structure for the model.

21 So there's examples in literature of using Markov  
22 models to look at IP traffic, Internet traffic. So we looked  
23 at those. But I also looked at -- we had the data, so we can  
24 analyze the data and see what the pattern of infractions were.

25 And so, the model building actually was an iterative

1 process, built a model -- you know, basically the model says,  
2 if this infraction is on this IP address and the next  
3 infraction is on this IP address, what are the ways it could be  
4 a different account or the same account? And the model  
5 calculates those probabilities.

6 And this rich data set informed the parameters and  
7 the structure of the model. So the model went through numerous  
8 stages of development, and getting more and more complicated to  
9 be more and more nuanced to reflect exactly how this process  
10 happened.

11 And then in each of those phases, it isn't just how  
12 do you know it's more accurate? You run it against the model.  
13 So running this model takes about two hours on a very fast  
14 computer. So it's not -- I mean, that gives you an idea of how  
15 many calculations are involved, because most things on a  
16 computer are instantaneous.

17 When the model is done, then I would compare tables,  
18 charts, results from the model to see if they were reasonable,  
19 if they were predicting the kind of things that we expected, if  
20 they were consistent with the data, and revise it over an  
21 iterative process.

22 And then we also received 122 -- records of 122  
23 accounts that were some of the most high -- accounts with the  
24 most infringements from the defendant and confirming that all  
25 122 of those accounts were indeed one -- all of those IP

1 addresses were indeed held by one account for a six-month  
2 period or even an extension in some cases that Cox reported on.

3 And in every one of those cases, that data confirmed  
4 accounts that we had verified. And it also -- that data also  
5 showed that our model is conservative. So conservative in the  
6 sense that, you know, both -- you know, the high level of  
7 confidence that we insisted on, 95 percent, but also  
8 conservative in other ways so that there were accounts there  
9 that were indeed -- where all the IP addresses -- all the IP --  
10 all the infractions on that IP address were attributable to one  
11 account, but my model wasn't able to verify it.

12 And it wasn't able to verify typically because the  
13 port changed or some other, you know, understandable factor  
14 where the model -- it doesn't decide, oh, it's a separate  
15 account. It just says, well, I can't be sure with the  
16 95 percent confidence that it is the same account. So in every  
17 case the Cox data confirmed that the model was either correct  
18 or conservative.

19 Q. Let's talk for a minute about the Cox data. They provided  
20 you with data associated with 122 accounts; is that right?

21 A. That's correct.

22 Q. And they did not provide you with more; is that right?

23 A. That's correct.

24 Q. What data did they provide you for the 122 counts?

25 A. Basically the confirmation that it was one account holder

1 during a six-month period. And then also the account holder in  
2 several -- a period after that six-month period. So we could  
3 conclude that from the beginning of the six-month period to the  
4 end of the six-month period it was the same account. And in  
5 some cases through the extended period.

6 Q. If Cox had provided you with additional information, would  
7 you have been able to do additional confirmation tests?

8 A. Of course.

9 Q. Did Cox's expert -- what, if any, criticism did Cox's  
10 expert have of your model?

11 A. Well, a variety of criticism, some which were -- I give no  
12 credence to. Like that we didn't follow scientific method. I  
13 don't know where he went to school, but, you know, this was a,  
14 you know, case study in scientific method. Scientific method  
15 is developing a theory, testing it with data, iterative  
16 refinement. We did all of that and we had the rich data set to  
17 do it.

18 There are also specific criticisms about how we -- so  
19 a complex model like this has parameters. I mean, I probably  
20 used that term several times. Parameters are like the knobs on  
21 the model. You know, so you can set the knobs to represent the  
22 data that you're trying to model. And I think our model has  
23 like ten knobs.

24 And how do you know how to set the knobs? Well, we  
25 use the data. So we looked at the data and we said, you know,

1 for instance, how -- what percentage of Cox subscribers are  
2 music sharers. So we had that knob.

3 We have another knob that says, how often do -- you  
4 know, when a music sharer is sharing music, how long a period  
5 do they tend to share music for. So we have these knobs.  
6 Those are called in mathematical parlance, they're parameters.  
7 How do you estimate the parameters? So Dr. Sullivan made some  
8 suggestions about how we could have done a better job  
9 estimating our parameters.

10 So we -- in the second reply report we revised all  
11 our parameters estimates --

12 Q. Pursuant to Dr. Sullivan's comments?

13 A. Correct.

14 Q. Continue.

15 A. And he also -- and so -- and actually it raised the  
16 percentage of verified infractions I think from 95 to  
17 96 percent.

18 So -- but the important thing is we had already done  
19 a lot of testing to see how sensitive the model is to those  
20 parameters. So if you have a model that's very sensitive to  
21 how you turn the knob, you have a problem basically. You  
22 either have to get the knob just right or your results are not  
23 very reliable.

24 The model parameters -- the model results did not  
25 have much sensitivity to the parameters. So we list both, the

1 old parameters and the new parameters in our reply report.  
2 Some of them -- they're all kind of -- from a mathematical  
3 viewpoint, I see that they're generally similar, but some of  
4 them are quite -- you know, there was quite a bit of change.  
5 And it didn't change the results of the model.

6 And then the last area of criticism was an  
7 interesting one. So there's some very rare states in the  
8 model. So, you know, music sharers -- anyway, in order for an  
9 IP address to go to another IP address that's also sharing  
10 music, the amount of time -- the amount of cases that -- our  
11 model missed some very small cases, which we intentionally  
12 omitted because it made the model so complex, you really -- it  
13 was already a very complex model, so it made it even more  
14 complex.

15 So what we did in our reply report is we built a  
16 model -- it's so complex we couldn't build what mathematicians  
17 call a closed forum. Like a closed forum is  $A = B$ , I can  
18 give you the exact answer. When you can't do that, sometimes  
19 you can say, well,  $A$  is maybe less than  $B$ , but I can't tell you  
20 exactly what  $A$  is.

21 So that's what we did. We were able to bound -- you  
22 know, give the lowest -- the lowest probability that it would  
23 be. We couldn't -- we couldn't get it exactly.

24 So even -- so we built a conservative -- what we  
25 called a conservative model with the new parameters. And even



1 with that model, I think 90-some, 1 or 2 percent of infractions  
2 were still in verified accounts.

3 So that's another example of the scientific method.  
4 All of these are parts of the process of building a reliable  
5 model, testing it against empirical data and validating it.

6 MR. CARACAPPA: Your Honor, one minute to consult my  
7 colleague, but I think I may pass the witness.

8 THE COURT: Certainly.

9 MR. CARACAPPA: Thank you. Your Honor, pass the  
10 witness.

11 THE COURT: All right. Cross-examination.

12 MR. WAKEFIELD: Thank you, Your Honor.

13 CROSS-EXAMINATION

14 BY MR. WAKEFIELD:

15 Q. Good morning. Good morning, Dr. Bardwell.

16 A. Good morning, Mr. Wakefield.

17 Q. We've met before --

18 A. We have.

19 Q. -- in your deposition. Your background is in mathematics,  
20 correct?

21 A. That's correct.

22 Q. You have no expertise in Internet traffic or Internet  
23 users?

24 A. Not that I could offer in court, no.

25 Q. And no expertise in ISP technology, Internet service

1 provider?

2 A. Well, you know, I do run a -- I have a consulting business  
3 and a software development business. So I have some  
4 familiarity with these areas, but I am not here to speak as an  
5 expert in those areas.

6 Q. And do you recall in your deposition you said you had no  
7 expertise in ISP technology?

8 A. In that context, yes.

9 Q. Okay. And no expertise in the music industry, correct?

10 A. Correct.

11 Q. And you have no expertise in BitTorrent in particular?

12 A. Again, only from the research that I've done for this  
13 project.

14 Q. And other than the work you've done on this project, you  
15 have no expertise in other peer-to-peer technology as well?

16 A. Correct.

17 Q. And other than work you've done in this case, you have no  
18 expertise in how music sharers engage in music sharing  
19 activity?

20 A. That's correct.

21 Q. And you don't have any particular expertise in the cable  
22 industry or cable technology?

23 A. Again, except outside of the research done for this case.

24 Q. And you certainly don't have expertise in copyright law?

25 A. No.

1 Q. Okay. Over the last five years, you would estimate that  
2 80 percent of Bardwell Consulting's work has been for  
3 litigation?

4 A. That's correct.

5 Q. You talked about a lot of these pieces of this analysis,  
6 but ultimately what it is trying to do is see if a pattern  
7 matches an account; is that fair?

8 A. Well, I have focussed on this idea of a signature, but I  
9 would say that my -- the model actually approaches it quite  
10 differently, but --

11 Q. Okay. But several times you talked about connecting  
12 something to an account. I heard that in your testimony.

13 A. That's correct.

14 Q. Okay. And your analysis and opinions in this case are  
15 based on one set of data, the Rightscorp infractions table,  
16 correct?

17 A. That's correct.

18 Q. And a couple times in your testimony you mentioned the  
19 word "infringement"?

20 A. Yes.

21 Q. And a few other times I believe you talked about file  
22 sharing and there were some documents that -- demonstratives  
23 that said "file sharing." Do you recall those?

24 A. I do.

25 Q. And I would like to talk about those terms. When you say

1 "infringement," you don't mean infringement as a court might  
2 instruct a jury on what infringement is, right?

3 A. Yeah, I do not.

4 Q. All right. And what you're really referring to is an  
5 observation that appears in the Rightscorp infractions table?

6 A. Correct.

7 Q. Okay. And that's essentially a record, a single record in  
8 the Rightscorp data?

9 A. That's right.

10 Q. Okay. And you don't know that an observation means that a  
11 song was actually available? You've been told that, but you  
12 don't know that, correct?

13 A. Well, I don't know, I find that a stretch. I feel like I  
14 do know that, but --

15 Q. Okay. In your -- let me ask this. You don't know if an  
16 observation means that there was a download of a song? That's  
17 what you testified in your deposition.

18 A. That's my understanding, yeah.

19 Q. Okay. Well, it's your understanding that you do not know  
20 if an observation shows a download of a song?

21 A. That's correct.

22 Q. Okay. And you don't know if an observation shows an  
23 upload of a song?

24 A. That's correct.

25 Q. Okay. In fact, you don't know that an observation shows

1 that Rightscorp actually observed a song?

2 A. Can you explain what you mean by observed a song?

3 Q. Well, there are these records in a big data set you got.

4 But you don't know that those records show that Rightscorp  
5 actually determined that a song was available? You've been  
6 told that, but you don't know that; isn't that right?

7 A. Well, I just heard eloquent testimony by Mr. Boswell about  
8 how his computer system works, and I'm very convinced that --

9 Q. Well, your --

10 A. -- those records --

11 Q. But, sir, the jury gets to decide that. I'm talking about  
12 your materials considered in your expert analysis and the scope  
13 of what your expert analysis is and what it isn't. So in your  
14 expert analysis, you're assuming that that's what the data  
15 shows but you don't personally know?

16 A. I have a hard time agreeing to that. As far as I know, if  
17 I don't know that, what do I know? I mean, I don't know what  
18 you are trying to drive at.

19 Q. So you believe that's the case?

20 A. Yes, I absolutely do.

21 Q. You assumed that from the beginning of your work in the  
22 case?

23 A. Yes.

24 Q. Okay. You talked about subscribers in your report?

25 A. Yes.

1 Q. Do you recall that? And at one point you defined a  
2 subscriber as Cox's Internet service subscribers, do you  
3 remember that?

4 A. Where is that?

5 Q. Do you have a copy of your report? It's page 31.

6 A. I don't think I do.

7 MR. WAKEFIELD: It's the original, but we can give  
8 him both if you've got them handy.

9 MR. CARACAPPA: Do you have it there?

10 MR. WAKEFIELD: Yes.

11 MR. CARACAPPA: Do you have a color copy for him?

12 MR. WAKEFIELD: Yes. Your Honor, I am not offering  
13 this into evidence, but just refreshing the witness'  
14 recollection about things in his report.

15 THE COURT: All right.

16 BY MR. WAKEFIELD: (Continuing)

17 Q. And I also have -- so do you have both the corrected and  
18 the reply copies?

19 A. I think there is only the corrected here.

20 Q. Okay. I will also get you your reply.

21 A. Thank you.

22 Q. So at page 31 of your -- what was called the corrected  
23 report, there's an attachment 9 with terminology?

24 A. Yes.

25 Q. And you defined "subscriber" as Cox's Internet service

1 subscribers. Do you recall that?

2 A. Yes.

3 Q. And you defined "infringement" in your analysis as a  
4 single observation of an asserted copyright being made  
5 available on a BitTorrent network by a subscriber. Do you  
6 remember that?

7 A. Yes.

8 Q. Okay. But later when I asked you about this in your  
9 deposition, you clarified that a subscriber does not actually  
10 refer to an actual person. Do you remember that?

11 A. I do.

12 Q. You said it was a mistake to assign personhood to the word  
13 "subscriber"?

14 A. Correct.

15 Q. Okay. A person that is involved in file-sharing activity  
16 might not be a subscriber at all, correct? It could be someone  
17 else with access to an IP address?

18 A. Correct.

19 Q. When you refer to a subscriber, you're referring to an IP  
20 address that -- or actually you're referring to a node that an  
21 IP address has been assigned to, right?

22 A. Yeah. So we could think of that node as a computer, which  
23 is pretty close to the person operating the computer, but not  
24 quite.

25 Q. Is the node to which the IP address is assigned on a

1 computer?

2 A. The node refers to -- by the Internet node, I was thinking  
3 of it -- IP address and the port, which are then the address of  
4 a specific computer on that node.

5 Q. So the -- but I'm talking about just the IP address. An  
6 IP address is assigned to a modem, right?

7 A. Correct.

8 Q. And there's -- the port is on a computer?

9 A. Correct.

10 Q. And there -- and ports are part of the Windows operating  
11 system?

12 A. Correct.

13 Q. Okay. You showed a document with a port as an example,  
14 6881?

15 A. Correct.

16 Q. That's a commonly used port by BitTorrent clients,  
17 correct?

18 A. That's correct.

19 Q. All right.

20 A. But it's --

21 Q. Another question about the concept of the subscriber. A  
22 person that gained access to an IP address might not be a  
23 subscriber, right? It could be a guest in a home?

24 A. That's correct.

25 Q. It could be a neighbor accessing an unsecured wireless



1 network, right?

2 A. I believe that's correct.

3 Q. It could be malware that takes control of computers and  
4 engages in file sharing without the consent of the computer  
5 owner, right?

6 A. I have heard that that's possible.

7 Q. In fact, some of the materials that you had talked about  
8 in your report discuss the problem of botnets?

9 A. Yes.

10 Q. And that botnets can generate peer-to-peer traffic on the  
11 Internet?

12 A. Correct.

13 Q. And in your home office you have Internet access, right?

14 A. I do.

15 Q. And you have WiFi, a wireless connection?

16 A. I do.

17 Q. And that means you can connect to the Internet in your  
18 home without plugging into the modem?

19 A. Correct.

20 Q. And you let other people in your home use the WiFi too?

21 A. Yes.

22 Q. Okay. Now, you also discussed sequences and repetition of  
23 events in the Rightscorp data. Do you recall that?

24 A. I do.

25 Q. You don't know that when there's a repetition, that means

1 that a subscriber engaged in repeated conduct, right?

2 A. So the -- by subscriber, the Internet -- the subscriber,  
3 Cox's subscriber -- no, we've already covered that. It may be  
4 someone else.

5 Q. And even if it is somebody else, you don't know that any  
6 person, for example, went and repeatedly put a file on a  
7 computer and pushed a button or did anything, correct? That's  
8 not necessary for there to be repeated observations?

9 A. No. My understanding is that -- what my model pretty much  
10 confirms is that there -- that the repeated infringements that  
11 are verified are due to a single computer.

12 Q. But no person using that computer had to go do something  
13 repeatedly for there to be a repeated observation, right?

14 A. That's -- so we went through this in my deposition. But,  
15 you know, the -- so I've done a little research on the  
16 BitTorrent process and some of their Web sites, and you -- the  
17 user has control over the BitTorrent software. So they --  
18 there's in fact a lot of hullabaloo on the BitTorrent community  
19 that people download songs and then they don't share them. So  
20 you can easily take a song and not share it.

21 So there -- you know, every day that Rightscorp data  
22 is recording an infringement is a day that the computer user  
23 did not decide not to share that song. So it may not be --  
24 they didn't have to download it again, but they had to decide  
25 not to stop sharing it.

1 Q. And that decision -- if an observation of 45 different --  
2 or let me ask the question differently. If there was an  
3 observation of 45 different events in one minute, you would  
4 count that as repeated because it's separate entries in the  
5 infractions table, right?

6 A. Only if they were different songs.

7 Q. Okay.

8 A. So, yes, it's the -- so the Rightscorp data records an  
9 infraction event with a timestamp and one row for each song.

10 Q. So just understanding the sort of metes and bounds of your  
11 analysis, even if we assume that everything in your analysis is  
12 correct, it doesn't tell us who did something at a Cox  
13 subscriber's home or business, right?

14 A. The identity of the person, no, it does not.

15 Q. Right. And it doesn't say, it doesn't tell you if there  
16 was a virus causing it, right?

17 A. If that were possible, yeah.

18 Q. And it doesn't say that if someone hacked in and got a  
19 password for that WiFi account, right?

20 A. Right.

21 Q. Are you familiar with the expression "garbage in/garbage  
22 out"?

23 A. Yeah, I've heard that before.

24 Q. That -- basically we talked about that in your deposition,  
25 do you remember?

1 A. Yeah.

2 Q. It basically means if you base a decision on poor  
3 information, you can't rely on the outcome, right?

4 A. Yes.

5 Q. And you'd agree that you could have a mathematically sound  
6 model that produces poor results, correct, if it's relying on  
7 data that's not good?

8 A. Yeah, I guess if you -- yeah, have data that's no good,  
9 sure, I guess that's possible.

10 Q. And in this case, all the data you relied on was the  
11 Rightscorp infractions table data?

12 A. That's correct.

13 Q. And you're not familiar with the underlying code that  
14 generated that data, right?

15 A. I have not examined that code.

16 Q. You've never tested it for accuracy?

17 A. No.

18 Q. And I believe you testified you don't -- in your  
19 deposition, you don't know --

20 A. Could I -- I should modify that a little bit. Because,  
21 you know, I didn't -- I wasn't asked to test the data, but I --  
22 the accuracy of the program, but I analyzed millions of rows of  
23 data from that program. And I can tell you a lot about how it  
24 operates and how precise and reliable and consistent the data  
25 was.

1           So I -- and I can tell you what the distribution of  
2 the data was and how things were -- I mean, a lot.

3           So nothing we observed -- in fact, we did observe an  
4 anomaly. There was a discussion with Mr. Boswell earlier about  
5 how early on the program was sending out lots of notices for  
6 one song. We got duplicate notices, that's one of the first  
7 things we identified in the data, for some songs early in the  
8 data. And one of the first things we did was filter those out.

9           So we did find -- that was -- you know, and actually  
10 we -- there is a -- we found a very -- .one-third of 1 percent  
11 of records where there's a song -- the same song on the same  
12 port on the same IP on one day. So very small, a few thousand  
13 out of millions.

14           And so, I know a lot about the precision and the  
15 reliability and the consistency of the data. And we have  
16 found -- as I said, when I started, I -- this is the most --  
17 the richest, highest quality data I've ever worked with.

18 Q. But I'm talking about the software that generated the  
19 data, not the data. Did you test that software?

20 A. I -- no, but, I mean, the way I -- the way one tests  
21 software is by running tests on the results of the software,  
22 and we did a lot of that.

23 Q. You don't know if the Rightscorp system had any controls  
24 in place to avoid sample bias; isn't that right?

25 A. Can you tell me what you mean by "sample bias."

1 Q. Skewing the results by picking particular things to look  
2 at as opposed to other things in sampling.

3 A. So how would that -- I don't understand that question in  
4 terms of how it would --

5 Q. Do you remember you answered that question in your  
6 deposition?

7 A. I do.

8 Q. Okay. And at the time you said you don't know if the  
9 system had any controls. Are you saying now you don't know  
10 what that question means?

11 A. Yeah, I don't really know how it would -- the bias -- I  
12 mean, it's counting events and observations, so it's kind of an  
13 open-ended question. Bias is term of art in statistics, so it  
14 has a very particular meaning, and I'm not sure what the  
15 meaning is here.

16 Q. Okay.

17 THE COURT: Mr. Wakefield, how much more do you have?

18 MR. WAKEFIELD: I have -- I'm guessing 10,  
19 15 minutes.

20 THE COURT: Okay. Well, then let's break now. We  
21 have gone a little longer than I had planned before our  
22 mid-morning break.

23 So let's take 15 minutes and we'll back and hear  
24 further testimony.

25 You are excused, thank you.

1 NOTE: At this point the jury leaves the courtroom;  
2 whereupon the case continues as follows:

3 JURY OUT

4 THE COURT: All right. We are in recess for  
5 15 minutes.

6 NOTE: At this point a recess is taken; at the  
7 conclusion of which the case continues in the absence of the  
8 jury as follows:

9 JURY OUT

10 THE COURT: All right. Joe, let's get our jury.

11 Mr. Reilly, the VW cases are going to the Northern  
12 District of California.

13 MR. REILLY: I'm sorry to hear that, Your Honor, but  
14 I guess you're not.

15 THE COURT: Well, actually, I was kind of interested  
16 in doing it.

17 NOTE: At this point the jury returns to the  
18 courtroom; whereupon the case continues as follows:

19 JURY IN

20 THE COURT: All right, please be seated.

21 Mr. Wakefield, please continue, sir.

22 MR. WAKEFIELD: Thank you, Your Honor.

23 BY MR. WAKEFIELD: (Continuing)

24 Q. Dr. Bardwell, before we took a brief break, we were  
25 talking about the question I had asked about sample bias, and I

1 think you didn't understand my question; is that right?

2 A. I asked you, yes, what kind of bias you were anticipating.

3 Q. Okay. So do you recall in your deposition I asked you  
4 questions, you took an oath, the same oath you would take --  
5 you took here today?

6 A. Correct.

7 Q. And I said, "It's important that you understand my  
8 questions before answering, and if at any time I ask a question  
9 you don't understand, please let me know, and I'll try to  
10 clarify it. Okay?"

11 And you said, "Very good."

12 Do you remember that?

13 A. Yes, I do.

14 Q. And then in your deposition, I asked, "Do you know if the  
15 Rightscorp system had any controls in place to avoid" -- 79,  
16 line 8.

17 I'll start over at page 79, line 8. You said -- I  
18 asked, "Do you know if the Rightscorp system had any controls  
19 in place to avoid sample bias?"

20 And you said, "I do not."

21 Do you remember that?

22 A. I do.

23 Q. The original set of data that you reviewed included data  
24 that admittedly was generated using the 10 percent bitfield.  
25 Were you aware of that?



1 A. No.

2 Q. Were you aware that it included data generated after the  
3 filing of the lawsuit, and you included analysis of records  
4 before and after? Do you remember that?

5 A. Yes.

6 Q. Okay. You don't personally know if Rightscorp's  
7 Infringement Finder software looked for 10 percent or 50  
8 percent or 100 percent of a bitfield; isn't that fair?

9 A. Except for the testimony I heard.

10 Q. Okay. And it wouldn't change your results based on the  
11 data set you received?

12 A. Correct.

13 Q. And you did not calculate any confidence intervals in your  
14 analysis?

15 A. Correct. Actually, we calculated -- I calculated  
16 confidence intervals for the parameters. However, they were --  
17 so a confidence interval is -- if you have a bell-shaped curve,  
18 those parameters, estimates, the knobs, any estimate like that  
19 that we make typically follows a bell-shaped curve, a normal  
20 distribution, and the confidence interval is typically 95  
21 percent confidence interval, what is the range under that  
22 bell-shaped curve, plus or minus the estimate you used, that  
23 would occur 95 percent of the time.

24 And when you do -- calculate confidence intervals, if  
25 you have a large sample, larger samples tend to make the

1 confidence interval narrower and narrower. So if you have 400  
2 to a thousand people, you do a survey nationally, you get plus  
3 or minus 2 to 5 percent or something like that.

4 We had millions of records. So the confidence  
5 intervals for our parameter estimates were so small, in other  
6 words, the estimates were so precise that there was no sense --  
7 we did an analysis within -- including the confidence interval,  
8 and it was pointless, so I didn't include that in my report.  
9 But yes, we did do that analysis.

10 Q. Okay. In your deposition, do you recall that I asked you  
11 the following question and you gave the following answer? And  
12 this is at page 188.

13 "Did your analysis include any calculation of  
14 confidence intervals?"

15 "Answer: No."

16 A. Can I see my deposition?

17 Q. Certainly.

18 THE COURT: What page, Mr. Wakefield?

19 MR. WAKEFIELD: Page 188. Would the Court like a  
20 copy?

21 It's page 188, line 8 to 11.

22 THE WITNESS: Yeah, but if you see at the bottom of  
23 that page, I added the explanation of confidence intervals for  
24 the parameters. I interpreted your first question to be did I  
25 compute confidence intervals for the results of the Markov

1 model, and we did not.

2 BY MR. WAKEFIELD:

3 Q. Okay. My question was, "Did your analysis include any  
4 calculations of confidence intervals?"

5 And you said, "No"?

6 A. Right. And later I said, "No. Just to be completely  
7 precise, though, we did look at confidence intervals for  
8 parameter estimates and some model correlation functions and  
9 other processes applied as we analyzed the data."

10 Q. Let me go -- right before that question on 188, and I just  
11 want to be clear on this point, you were not using the data you  
12 reviewed to make predictions about other data, correct?

13 A. That's correct.

14 Q. The analysis that you used required code to be written,  
15 correct?

16 A. That's correct.

17 Q. That was written in a language called R?

18 A. Correct.

19 Q. The letter R.

20 You didn't write that code yourself, right?

21 A. That's correct.

22 Q. And you didn't supervise the writing of the code?

23 A. Well, I know you're going to refer to my deposition  
24 again -- and again, I said I didn't. So what I interpreted  
25 your -- did I sit over their shoulder and watch them write the

1 code? No. I have staff that writes code. I wrote all our  
2 code for years, and if I didn't have staff writing this 2,000  
3 lines of code, we wouldn't be -- I couldn't be here today.

4 So -- but I supervised it, as I described in my  
5 deposition, very closely, designed the algorithms, designed  
6 tests of those algorithms, reviewed the tests, designed and  
7 specified improvements and changes, and reviewed those through  
8 the whole process.

9 Q. I'd like to talk about the set of the data that you  
10 received. First of all, are you aware that over 7 million  
11 notices were sent on behalf of BMG to Rightscorp before this  
12 lawsuit?

13 A. I wasn't familiar with that number, no.

14 Q. The records you got were originally -- originally included  
15 2.7 million records; is that right?

16 A. Well, their full data set was, I think, 15 million, and we  
17 had -- that sounds like the correct number of, of notices we  
18 had initially considered, yes.

19 Q. So the full set was 15 million, and then you considered  
20 about 2.7 million?

21 A. Correct.

22 Q. All right. And in this action for the relevant period,  
23 that's now alleged to be about 1.8 million?

24 A. That's correct.

25 Q. Okay. In your analysis, you used visual observation to

1 determine which songs were a match in building your model.

2 A. Yes.

3 Q. And during that process, certain songs were filtered out  
4 of your analysis. Do you recall that?

5 A. Some songs were removed from the list of asserted songs.  
6 Is that what you're referring to? Yes.

7 Q. Yeah. You don't know why those were removed?

8 A. I do not.

9 Q. Okay. Are you aware that at the beginning of this  
10 lawsuit -- well, first of all --

11 A. Could I -- I just want to make it clear. We included the  
12 songs that the attorneys said were still relevant to the case.  
13 That -- I don't know the particulars of the legal side of it,  
14 but we were given lists, and we used those songs.

15 Q. And some of the songs that were on the list and are not  
16 were BMG songs?

17 A. Correct.

18 Q. Do you know how many originally were asserted and then  
19 were removed?

20 A. I couldn't say with any accuracy, no.

21 Q. Are you aware that at the beginning of this case -- let  
22 me, let me ask a different foundational question.

23 One of the things you reviewed --

24 THE COURT: Hold on a second.

25 MR. CARACAPPA: Your Honor, may I approach?

1 THE COURT: Yes, sir.

2 (Sidebar on the record.)

3 MR. CARACAPPA: Your Honor, if counsel is going to  
4 get into what I think are some of the Court's rulings and  
5 attempt to challenge his data, I think that's inappropriate.  
6 The scope of the case has changed. It's been narrowed.  
7 There's been Round Hill copyrights that have been removed. His  
8 data with respect to the copyrights that are at issue is  
9 relevant, but his data with respect to copyrights that are not  
10 at issue is not relevant.

11 MR. WAKEFIELD: So I was not going to touch on Round  
12 Hill at all, but his original -- his report purported to verify  
13 for Round Hill, and in the aggregate pre-complaint and  
14 post-complaint accounts, and the number was 68,000, I believe,  
15 that he verified. But that's out of a much smaller data set  
16 that were sent to Cox, including on behalf of the 7 million,  
17 and when I asked about the 7 million, that was only BMG's.

18 So the only way to look at the, the ratio of how many  
19 asserted repeat infringement accounts there were, and his  
20 conclusion was to talk about the data set he got and  
21 considered, but I wasn't going to mention Round Hill or any  
22 exclusion of their copyrights. I was going to point to the  
23 complaint, without mentioning names, the total allegation of  
24 accused repeat infringement subscriber accounts, which was  
25 200,000. He then got the data for all of those plaintiffs and

1 he came up with 68,000.

2 MR. CARACAPPA: Your Honor, but that's not the  
3 current case, the current case, because the copyrights have  
4 been narrowed and because the frame is now different from when  
5 the complaints were filed. That data is no longer relevant,  
6 and if we're going to explain that that data once existed, then  
7 we have to explain all the Court's rulings that narrowed the  
8 issues in the case.

9 THE COURT: He doesn't want to explain the  
10 differences in the data set or where it came from. He's  
11 interested in what conclusion that he reaches from that.

12 MR. WAKEFIELD: From the total data set, which was  
13 less than 50 percent verification rate of the total accounts,  
14 and now -- and that's -- I don't have to -- we don't have to  
15 say anything about Round Hill. He started with a larger number  
16 of works. That's true for BMG. We're very careful to make  
17 that point. We don't have to talk about the fact that the  
18 plaintiff didn't own the copyright in this examination.

19 MR. CARACAPPA: But that's exactly my point. My  
20 point is that there were large numbers at the beginning of the  
21 case, and now they're going to say there are smaller numbers  
22 now, and they're going to attempt to imply the data is  
23 inaccurate and has somehow changed, because at one time, there  
24 were large numbers, and now there are small numbers, and the  
25 scope of the case has narrowed.

1 MR. GENNARI: He wants to compare this 200,000 in the  
2 subscriber account that's in the complaint with verified  
3 accounts, and these aren't verified accounts. These didn't run  
4 through the accountability analysis.

5 MR. WAKEFIELD: That's the point.

6 MR. GENNARI: But --

7 THE COURT: Hold on. You can't talk over each other.

8 MR. WAKEFIELD: They accused us of being willfully  
9 blind for not terminating all of these accounts. They said in  
10 the complaint that there were over 200,000 of them out of that  
11 data set for both plaintiffs, this expert analysis where he was  
12 asked to verify it, but for some reason, he was given fewer  
13 works to assess even back then, and he came up with 68,000 of  
14 the over 200,000.

15 And it goes to the, the reliability of the  
16 accusations that were made against Cox from the beginning of  
17 this lawsuit and earlier. It doesn't have to touch on any  
18 Round Hill copyrights or any summary judgment. That's the data  
19 set that he did, and he didn't provide any updated report  
20 excluding Round Hill. So we have no way to cross-examine him  
21 other than what was given to me during Rule 26 disclosures.

22 MR. CARACAPPA: I don't think that that's accurate.  
23 He provided an updated exhibit that is now in evidence that  
24 has --

25 MR. WAKEFIELD: The night before last.



1 MR. CARACAPPA: You didn't have a problem with it.  
2 You said the same analysis has been done. So if you want to  
3 question him on the analysis and how it's been done with  
4 respect to the copyrights at issue, but the things that are in  
5 the complaint are no longer in evidence. It's not evidence.

6 MR. WAKEFIELD: He didn't disclose how many accused  
7 repeat infringing subscriber accounts of the 200,000 were those  
8 that are the --

9 MR. CARACAPPA: But then the 200,000 are not --

10 THE COURT: I'm going to allow the cross-examination  
11 with those exhibits. You can clean it up if you choose to on  
12 redirect.

13 MR. CARACAPPA: Thank you.

14 THE COURT: All right, thank you.

15 (End of sidebar.)

16 THE COURT: Please proceed.

17 MR. WAKEFIELD: Thank you, Your Honor.

18 Q. Dr. Bardwell, one of the things you reviewed in preparing  
19 your report was the complaint that had been filed against Cox  
20 in this case. Do you recall that?

21 A. Yes.

22 Q. And do you recall that there was an allegation that there  
23 were over 200,000 subscriber accounts that were engaged in  
24 repeated infringement?

25 A. I actually -- I just -- in reviewing notice, I don't

1 recall the complaint, details of the complaint.

2 Q. Okay. Actually, the -- so if you could turn -- we're not  
3 going to put this in evidence, but we can -- if you can turn to  
4 page 10, paragraph 27.

5 MR. CARACAPPA: Objection, Your Honor. Lacks  
6 foundation.

7 THE COURT: I'm sorry?

8 MR. CARACAPPA: Lacks foundation. I don't even know  
9 whether the witness has ever seen this document before.

10 THE COURT: I thought it was the complaint.

11 MR. CARACAPPA: It is, Your Honor, but he's a  
12 statistician, and I don't know whether he's seen this document  
13 before.

14 THE COURT: All right, sustained.

15 BY MR. WAKEFIELD:

16 Q. Sorry, I thought I asked you this. Wasn't the complaint  
17 among the materials you considered?

18 A. Well, I was kind of fumbling around because I was trying  
19 to say I know it was because I looked through the files  
20 yesterday, and I saw that the complaint was there, but I  
21 don't -- as I said, I don't recall reading it or the contents.

22 THE COURT: Well, it's the data that you're  
23 interested in?

24 MR. WAKEFIELD: Yeah. So I can, I can -- I don't  
25 know how the Court would like to approach this. It was in the

1 materials he considered cited in his report.

2 THE COURT: Okay. You can ask him whether he --

3 MR. WAKEFIELD: Okay.

4 THE COURT: -- used any of the information in the  
5 complaint. I think that -- if that's what you're interested  
6 in, go ahead.

7 BY MR. WAKEFIELD:

8 Q. Okay. So, Dr. Bardwell, did you consider the allegations  
9 in the complaint?

10 A. No.

11 Q. All right. You didn't cite in your report any of the  
12 parts of the complaint?

13 A. Typically, we -- my staff and I put together parts of the  
14 context of -- or we start our reports with a little context  
15 section that tries to give a little framework for the case, and  
16 we typically take things out of the complaint, and I often  
17 don't participate that much in drafting that little  
18 introductory paragraph, so I don't recall.

19 Q. Okay. Do you still have your report in the case?

20 A. I do.

21 Q. The corrected expert report? If you'd turn to page 4.

22 If you look -- there's a -- I won't ask you to read  
23 the sentence, but you say, "Context of the analysis"?

24 Do you see that?

25 A. That's the section I was referring to, yeah.

1 Q. And footnote 1 cites complaint. Do you see that?

2 A. I do.

3 Q. There's another cite to the complaint in footnote 2?

4 A. I see that.

5 Q. And then in footnote 3?

6 A. I do.

7 Q. And footnote 5, 6, 7, 8, 9, 10? Do you see those?

8 A. I do.

9 Q. Okay. So if you could turn back to paragraph 27 of the  
10 complaint?

11 THE COURT: If he's used specific data that you want  
12 to identify for the purpose of your examination, then go ahead.

13 MR. WAKEFIELD: Okay.

14 THE COURT: I mean, he said he didn't consider the  
15 complaint. If you have something that you believe he placed  
16 into his report, then let's focus on that.

17 BY MR. WAKEFIELD:

18 Q. Okay. Dr. Bardwell, did you consider the number of  
19 alleged repeat infringing subscriber accounts in the process of  
20 your analysis?

21 A. You mean the number stated in the complaint?

22 Q. The number that had been alleged against Cox, whether in  
23 the complaint or otherwise.

24 A. No.

25 Q. You didn't consider that at all?

1 A. No.

2 Q. And out of the pre-complaint verified accounts in your  
3 report, you identified 68,170; is that correct?

4 A. Where are you looking?

5 Q. This is in table 6 of your report.

6 A. Could you repeat the question, please?

7 Q. In your report, you concluded that there were 68,170  
8 verified pre-complaint accounts, right?

9 A. Correct.

10 Q. And that's now revised to 60,707 today?

11 A. Yes.

12 Q. Dr. Bardwell, you talked about some other experience you  
13 had working in other cases today.

14 A. Yes.

15 Q. Do you recall that?

16 A. I do.

17 Q. Do you recall you provided a report in a case called  
18 *Manley v. National ProSource, Inc.*?

19 A. I do.

20 Q. And that was a statistical analysis you did in that case?

21 A. It was.

22 Q. All right. And do you recall that the court found your  
23 methodology was fundamentally flawed in that case?

24 A. I haven't -- I know the court found some flaws in my  
25 methodology, yes.

1 Q. Specifically, do you remember that the court grouped data  
2 together in ways that the court rejected?

3 A. I don't recall the specific findings of the court.

4 Q. Sir, I've handed you an opinion from the court in the  
5 *Manley v. National ProSource* case. That's the case we were  
6 just discussing.

7 A. Yes.

8 Q. And if you look to page 5 --

9 MR. CARACAPPA: Your Honor, I'm going to object. If  
10 the witness has an understanding for the decision, that's fine,  
11 but again, there's no foundation for the document.

12 THE COURT: I think that's correct. I mean, do you  
13 want to refresh his recollection with it? What's the purpose  
14 of that?

15 MR. WAKEFIELD: Yes, refresh his recollection as  
16 to --

17 THE COURT: I think you can point to areas and see --  
18 ask him whether it refreshes his recollection, but it's not  
19 in -- go ahead.

20 MR. WAKEFIELD: Okay. Thank you, Your Honor.

21 Q. If you could turn to page 6 of that opinion? And I want  
22 to direct you to the last full paragraph in the second column  
23 that begins "Fifth."

24 Do you see that?

25 A. I do.

1 Q. Does that refresh your recollection as to one of the  
2 court's criticisms of your analysis in that case?

3 A. Yes.

4 Q. And the -- that criticism was that your opinions have not  
5 been shown to be reliable because you provided no meaningful  
6 explanation of how you reached the conclusions; is that right?

7 A. That's what the judge found.

8 Q. Okay.

9 A. I disagree. I provided ample explanation.

10 Q. All right. Do you remember a case called *Coleman v.*  
11 *Oracle*, where you also provided an opinion?

12 A. I do.

13 Q. Do you remember any of the court's criticisms of your  
14 opinion in that case?

15 A. Not precisely.

16 Q. If you could turn to page 4 of what's been marked for  
17 identification DTX 13, it's the opinion in the *Coleman v.*  
18 *Oracle* case.

19 A. Yes.

20 Q. And there's a heading C that says "Reliability."

21 A. Yes.

22 Q. Do you see that?

23 A. I do.

24 Q. And if you look at that first sentence, does that refresh  
25 your recollection as to one of the court's criticisms of your

1 analysis in that case?

2 A. Yes.

3 Q. And the court found that even if relevant, your reports  
4 were not reliable; is that right?

5 A. That's correct.

6 Q. Okay. If you look down in paragraph 4 -- I'm sorry -- on  
7 page 4, the top of the last paragraph on that page?

8 A. Yes.

9 Q. In the second sentence the court also found there's no  
10 evidence that Bardwell ruled out alternative explanations?

11 Do you see that?

12 A. I do.

13 Q. Okay. If you go to the next page, page 5, the top of the  
14 left column, the court found that you relied on assumptions to  
15 make unsupported conclusions; isn't that right?

16 A. Yes.

17 Q. You also gave an opinion in -- or offered a report in the  
18 case of *Werede v. Allright Holdings*? Do you remember?

19 A. Yes.

20 Q. And were there criticisms by the court of your opinion in  
21 that case?

22 A. There were.

23 Q. Okay. In that case, do you recall that you did a  
24 statistical analysis in a discrimination case?

25 A. Yeah. These were all statistical analyses in



1 discrimination cases.

2 Q. Do you recall the court's criticism that your opinions  
3 were not based on sufficient facts and data?

4 A. Yes.

5 Q. And do you recall that the court found that you did not  
6 reliably apply recognized principles or methods to the facts  
7 presented?

8 A. Yes. Something like that, yes.

9 Q. How many hours would you estimate that you and your team  
10 spent on this case?

11 A. I think it was about 1,200 hours.

12 Q. And do you know the total amount spent in preparing  
13 your -- in your work on this case?

14 A. I think we've invoiced for 310,000.

15 Q. And what is your hourly rate?

16 A. Mine is 350 an hour.

17 MR. WAKEFIELD: Pass the witness, Your Honor.

18 THE COURT: All right. Redirect?

19 MR. CARACAPPA: Yes.

20 REDIRECT EXAMINATION

21 BY MR. CARACAPPA:

22 Q. Dr. Bardwell, have you been qualified as an expert witness  
23 before?

24 A. I have.

25 Q. In how many cases?

1 A. It's nineteen I believe I've counted.

2 Q. And have you been qualified as an expert here today in  
3 this case?

4 A. Yes.

5 Q. Are you aware of whether or not Cox at any time has  
6 challenged your expertise in this case?

7 MR. WAKEFIELD: Objection, Your Honor. Going to  
8 rulings.

9 THE COURT: Sustained.

10 BY MR. CARACAPPA:

11 Q. In how many cases have you been qualified as an expert?

12 A. All 19 of those cases.

13 Q. Okay. Let's talk for a minute about the cases where you  
14 were not qualified as an expert. Were you paid for all of  
15 those cases?

16 A. Yes.

17 Q. And those were -- were they discrimination cases? Is that  
18 right?

19 A. That's correct.

20 Q. And can you explain how, if at all, those cases are  
21 different than this case here today?

22 A. Yeah. They're different in -- so part of this is -- I'm  
23 very interested in the law, so I read a lot of case law. It  
24 helps me apply mathematics to case law, and there's, frankly, a  
25 change in the way courts look at analyses, especially for

1 employment discrimination cases, which I've done a lot of pro  
2 bono work and do a lot of work on discrimination, and so every  
3 one of these cases were cases where the employer didn't -- I  
4 used all the data that the employer provided, and then the  
5 court decided I had to have more data or you couldn't do an  
6 analysis.

7           So the most egregious one was the first case,  
8 *Werede*, which is the way I've heard it pronounced. These are  
9 Somali African parking lot attendants in Denver, Colorado,  
10 treated pretty brutally, no, you know, they're given a pot to  
11 pee in and cursed at. It's pretty -- a very abusive working  
12 environment.

13           Obviously, the data that they provided, which was  
14 only salary records, were falsified, because they had penciled  
15 in, changed the data, you could tell. There was a pattern of  
16 change in the data. That was all the data they had.

17           And then the judge -- so I did an analysis, a  
18 regression analysis of salary based on time that they had  
19 worked, and the Somali Africans were paid less, and the judge  
20 said I didn't include their military record -- he lists  
21 these -- education record, you know, things that not only did  
22 the employer not have those, but most of these people couldn't  
23 even have those, and then he threw out my analysis.

24           And I, you know, my deference to the court, but the  
25 judge -- that judge was notorious for having rulings like this

1 that were that biased.

2 Q. It was the fact that you didn't have enough underlying  
3 data in that case, right?

4 A. Supposedly, but I had enough data to do an analysis, and I  
5 had all the data that was provided, and I obviously did an  
6 analysis. I had a confidence interval.

7 Q. Do you believe that the data that you relied on in this  
8 case is mathematically sound?

9 A. Absolutely.

10 Q. Can you please explain?

11 A. Well, there's a world of difference here. Those were -- I  
12 mean, we had, I think, maybe six or eight different versions of  
13 the salary records because they kept changing them and they  
14 couldn't find them and they were -- so they're all  
15 hand-generated. They're very inaccurate, in addition to being  
16 purposely falsified, you know, and very -- you know, with only  
17 a few pieces of data, how much they were paid, when they were  
18 paid it, and who they were.

19 And so that's a world of difference from the millions  
20 of computer-generated data that we have here.

21 Q. Dr. Bardwell, Cox's counsel asked you a question and you  
22 were about to explain it and he kind of cut you off a little,  
23 and he asked you about the most commonly used ports. Do you  
24 recall that question?

25 A. I do.

1 Q. All right. Can you please explain what opinion do you  
2 have, if any, regarding the most commonly used ports?

3 A. So 6881 was initially a port that was preferentially  
4 available for BitTorrent users, and I -- so that port had a  
5 little over 10 percent of assignments overall.

6 Other ports, there's a few that are between 1 and 2  
7 percent, and all the other ones are under 1 percent. So ports  
8 are a very important and identifying part of the signature of a  
9 user.

10 In August 1 of 2014, I believe, the -- maybe it was  
11 2013 -- using analysis of the Rightscorp data, we could  
12 determine that the use of ports changed, and that was because  
13 of a change in the BitTorrent software. Part of this has to do  
14 with the fact that you can identify users by their port, so  
15 there's a bunch of articles on the Internet that I've read and  
16 so forth and news groups where they tell you how to randomize  
17 your port or -- they have a switch you can turn on to randomly  
18 change your port so you can't be tracked as easily, or you can  
19 also have it sequentially. So we have a graph in my report  
20 that shows a user whose port changes like this and then up like  
21 this, so, you know, every -- periodically, the ports, going  
22 through a series of ports.

23 So anyway, port signature is very important, and  
24 that's also borne out by the fact that the community has  
25 developed ways to kind of disguise their port.

1 Q. Do you have an opinion regarding the variability of port  
2 numbers?

3 A. Yeah. We can compute that very precisely from the data.  
4 So that's -- I mean, I have -- we have -- so the model -- some  
5 of those knobs, the parameter, one of the parameters is how  
6 common a port is.

7 And, you know, following the suggestion of  
8 Dr. Sullivan, the defense expert, that port probabilities may  
9 change, we computed in my revised report two tables of port  
10 probabilities, before and after that date where they changed,  
11 and so we provided those and, with our report, the complete  
12 listing of the ports and the probabilities.

13 Q. Are there any tables and charts in your expert reports  
14 that would help you explain this concept to the jury?

15 A. Yes.

16 Q. Can you please turn to page 13 of your expert report?

17 MR. WAKEFIELD: Your Honor, I think this is going  
18 beyond the scope, and also putting in the report itself, this  
19 wasn't one of the disclosed demonstratives.

20 THE COURT: The report's not in, right?

21 MR. CARACAPPA: No, it's not, Your Honor, but we're  
22 using this chart to demonstrate the port variability the  
23 witness is talking about. We did inform Cox two nights ago  
24 that we would use figures in his report. It's not a separate  
25 demonstrative, but it's a figure in his report.

1 THE COURT: All right. I think it's proper redirect.  
2 I'll allow it.

3 MR. CARACAPPA: Thank you, Your Honor.

4 Q. Okay. Dr. Bardwell, can you please explain this chart to  
5 the jury?

6 A. Yeah. This is my effort at kind of giving a visual  
7 picture of the rareness of ports and the stability of port  
8 assignments. So in this chart -- I like to be able to point at  
9 things -- but the tall bar shows you, this is a count of how  
10 many IP addresses, that height of the bar is how many IP  
11 addresses have how many ports. So you can see under one,  
12 almost all -- well over 90 percent of ports -- of IP addresses  
13 only have one port.

14 So what this tells us is that the port -- not only  
15 does the IP address tend to be stable, but the port assignment  
16 tends to be stable. So you have much smaller numbers that have  
17 two, three, four and -- total number of IP address that have  
18 five or more ports is only 564 out of the over one hundred  
19 thirty-some thousand originally considered in this report, and  
20 these -- just it is interesting, I mean, there's a whole --  
21 there is a separate class, pretty rare, of music sharers who do  
22 this port switching and the port randomization to hide their  
23 activity.

24 They have lots of sharing activity on lots of ports,  
25 but you can see there's a very -- a lot of the usage is --

1 there aren't very many of those high -- those users who are  
2 doing that. Most users are using a consistent port over time.

3 Q. Dr. Bardwell, I'd like you to look at your testimony on  
4 page 188.

5 THE COURT: This is his deposition?

6 MR. CARACAPPA: This is his deposition testimony,  
7 Your Honor, yes.

8 THE COURT: What's your question?

9 BY MR. CARACAPPA:

10 Q. My question is do you feel that Cox's counsel fairly  
11 represented to the jury your deposition testimony on the issue  
12 of confidence intervals?

13 A. No. I thought that was kind of underhanded, frankly.

14 Q. Explain.

15 A. Well, because he's saying you don't have any confidence  
16 intervals, and right on the same page, I said, well, you know,  
17 yes, I did use confidence intervals for parameters, and as I  
18 explained when he initially asked me, I was thinking confidence  
19 intervals for the Markov model outcomes, which we didn't --  
20 Markov models are not typically associated with confidence  
21 intervals.

22 THE COURT: Okay. He's answered.

23 MR. CARACAPPA: Okay. Thank you, Your Honor.

24 Q. Cox's counsel said that you're not an expert in the field  
25 of copyright law, and is it fair to say that statisticians are



1 oftentimes retained in areas where they're not experts in the  
2 underlying field?

3 A. Yeah. And I have worked on a case with -- where copyright  
4 was an issue, but, in fact, I was thinking about this, I have  
5 never, ever testified in a case about statistics, ever, in a  
6 hundred cases -- or a hundred engagements. I mean, I've  
7 testified about child welfare, I've testified about shotgun  
8 shells, I've testified about computer systems that track  
9 welfare payments and foster care for kids, I've testified about  
10 quite a -- employment discrimination issues, and now I've  
11 testified about collection of royalties for the federal  
12 government.

13 I mean, none of the -- there's a wide range of cases.  
14 In fact, when I went back to school, I was trying to decide  
15 what to major in, and my father was -- he had provided a good  
16 example, and I could see from what he did that a statistician  
17 gets -- I'm interested in a lot of things, and a statistician  
18 gets to be involved in a lot of interesting projects, and I  
19 thought if I became a physicist or something else, that's all  
20 I'd get to do.

21 So, in fact, I'm always dealing with data. It's  
22 always data centric, but data and patterns in data, but always  
23 in different fields.

24 Q. Thank you, Dr. Bardwell.

25 Cox's counsel talked a little bit about an IP address

1 and a Cox subscriber. Do you recall that?

2 A. I do.

3 Q. Associated with the Cox subscriber account is a computer;  
4 is that right?

5 A. Correct.

6 Q. Do you have an opinion regarding whether -- strike that.

7 Do you have an opinion regarding the probability that  
8 it's the same computer using that Cox account that is  
9 performing the infringements that are identified or the making  
10 available?

11 A. Yes. Because of the rareness of ports and the relative  
12 stability of the IP address and the number of ports assigned,  
13 I've computed that it's over a 99 percent probability that when  
14 we identify a count, we're actually talking about one computer.

15 MR. CARACAPPA: Thank you.

16 Your Honor, no further questions.

17 THE COURT: All right. May the doctor be excused, or  
18 do you want him held for possible further testimony?

19 MR. CARACAPPA: Yes, Your Honor, held for possible  
20 further testimony.

21 THE COURT: All right. Dr. Bardwell, you're done for  
22 today, but you're subject to recall in the case as we go along,  
23 so you -- please don't discuss the testimony you've given with  
24 any fact witness that may testify in the case after your  
25 testimony today, all right?

1 THE WITNESS: Thank you, Your Honor.

2 THE COURT: All right. Thank you, sir.

3 THE WITNESS: Thank you.

4 (Witness excused.)

5 THE COURT: Next witness.

6 MR. CARACAPPA: Yes, Your Honor. We'll be reading in  
7 some deposition testimony.

8 THE COURT: Okay.

9 MR. CARACAPPA: I will be the lawyer, and my  
10 cocounsel will be Mr. Negretti.

11 THE COURT: All right. So you're reading the direct,  
12 as well as any counter-designations, or is different counsel  
13 going to read portions of it, or tell me the ground rules so  
14 that the jury understands.

15 MR. CARACAPPA: Yes, Your Honor. I think we have an  
16 agreement on the designated testimony. I'm going to read the  
17 question, Mr. Gennari is going to read the answer, and then  
18 Karl is going to pull up the exhibits as that testimony is  
19 being discussed.

20 MR. BUCKLEY: Yeah, that's right. This has already  
21 been part of a designation and counter-designation process. As  
22 long as Mr. Caracappa reads all of it, we don't have a problem.  
23 And you don't have a copy?

24 MR. CARACAPPA: I think I just gave it to -- I just  
25 gave Jed a binder.

1 THE COURT: All right. So, ladies and gentlemen,  
2 this is another -- the testimony of another witness who's  
3 unavailable to come into the courtroom. Counsel for both  
4 parties have identified -- designated testimony they would like  
5 for you to receive, and there have been counter-designations in  
6 this case by Cox, and so you'll hear that testimony by the  
7 lawyers today instead of a video. We'll actually be reading  
8 from the deposition record, all right?

9 MR. CARACAPPA: If I may, Your Honor, the reason  
10 we're doing this is because it wasn't videotaped. So we don't  
11 have a videotape.

12 THE COURT: Okay.

13 (Portions of the testimony of SIDD NEGRETTI - by  
14 deposition, were read into the record as follows:)

15 EXAMINATION

16 BY MR. CARACAPPA:

17 "Q. Good morning, Mr. Negretti. How are you?

18 A. Good.

19 Q. What company do you work for?

20 A. Cox Communications.

21 Q. How long have you been employed by Cox Communications?

22 A. Since January 1999.

23 Q. What are your current job responsibilities, Mr. Negretti?

24 A. I am the executive director of product marketing strategy,  
25 which includes overseeing the product marketing aspect of all

1 of our core products, video, voice, and data."

2 THE COURT: Please get a little closer to the  
3 microphone, if you would, and maybe slow down just a little  
4 bit.

5 MR. CARACAPPA: Karl, can you please pull up  
6 Exhibit 2, PX 1399?

7 "Q. If you will turn to -- have you seen this document before?

8 A. Yes.

9 Q. You have? In what capacity?

10 A. I believe they have reviewed it among the documents during  
11 the preparation.

12 Q. With Ms. Rosen or with counsel?

13 A. I cannot specifically recall.

14 Q. Okay. But this is not the one that you recall reviewing  
15 with Ms. Rosen, correct?

16 A. This is a proposal. This does not actually contain the  
17 insights -- this is a proposal between the insights company and  
18 our company.

19 Q. If you will look at the second page, Mr. Negretti, under  
20 "Desired Outcomes," the document indicates this is an ongoing  
21 study. Is that true, is there an ongoing Attitude and Usage  
22 Tracking Study at the company?

23 A. Yes.

24 Q. Do you understand data to refer to high-speed Internet?

25 A. Yes.

1 Q. What sort of monitoring of consumer attitude has Nielsen  
2 done in the past with respect to data?

3 A. Yes. So similar to the earlier points, at a high level,  
4 they're going to try to understand consumer satisfaction with  
5 the product on our behalf. They're going to try to understand  
6 consumer willingness to pay for the product. They're going to  
7 understand consumer-specified targets and features that they  
8 desire. They want to understand unmet needs and features that  
9 we do not provide. They're going to want to ask about their  
10 overall perception of the product and the brand, for example.

11 Q. Sure. But are there studies that have been done at Cox  
12 either as part of the Attitude and Usage Tracking Study or  
13 otherwise that are designed to understand how subscribers use  
14 the Internet and what they use the Internet for?

15 A. Yes.

16 Q. And explain to me why it's important for the company to  
17 know and understand how subscribers use the Internet.

18 A. So because it's a key product that we sell, we need to  
19 know and understand what we need to be doing as a company to  
20 make sure we're still continuing to meet the needs of that  
21 consumer as they change and evolve.

22 Q. When you say it's a key product of the company, what do  
23 you mean?

24 A. So we have four key products with the company: video  
25 service, voice service, Internet or data service, and home life

1 automation service.

2 Q. When you say video service, you are referring to  
3 television service?

4 A. Yes, cable TV.

5 Q. Cable TV and then high-speed Internet and then telephone  
6 and then home automation?

7 A. Yes."

8 MR. CARACAPPA: Karl, could you pull up Exhibit 3,  
9 PX 1400?

10 "Q. Is this a tracking survey like the one you have just  
11 described? Did you look at this document in preparation for  
12 your deposition, Mr. Negretti?

13 A. Yes. Yes, it is.

14 Q. And how do you use this -- or do you use this document in  
15 the ordinary course of your business?

16 A. Yes.

17 Q. How so?

18 A. So like I said, this will help us understand what our  
19 consumers are thinking about in terms of the overall landscape  
20 in which they use products and services that we could offer,  
21 the specifics of the products and services that they do  
22 subscribe to, the likelihood to subscribe to other products and  
23 services that are similar to this, other main points and  
24 concerns they have with the products and services that they  
25 subscribe to, whether it be from us or from another provider.

1 Q. This document indicates it's from June 2012. Is that your  
2 understanding?

3 A. Yes.

4 Q. Okay. How about tracking studies about high-speed  
5 Internet, residential subscriber tracking studies in general?

6 A. Yes. The definition tracking means we're on an ongoing  
7 basis trying to track what our consumers are thinking in some  
8 cases.

9 Q. Well, I'm just trying to get a -- I guess I'm trying to  
10 get an understanding of how often this is done, because this is  
11 the only one I have, and I'm wondering if there have been more  
12 recent tracking studies like this done at the company.

13 A. Yes. I'm not sure that we still do this tracking study in  
14 specific. We may not do as much of the ongoing tracking as an  
15 organization anymore. We may do more on demand or as-needed,  
16 ad hoc discovery and insight building.

17 Q. Is it your testimony or understanding that there are other  
18 tracking surveys that have been done since this point in time,  
19 June 2012?

20 A. I believe so.

21 Q. Okay. So, for example, the second activity that's listed,  
22 downloading large files, there's a number 44.4 percent below  
23 that. What does that number refer to?

24 A. Yes. So those -- to your point, those are 44 percent of  
25 our consumers rated that attribute, downloading large files, in



1 their top five.

2 Q. Okay. And then that would be the same for uploading  
3 pictures, music, movies, etc., that category number, 37.4  
4 percent?

5 A. That is correct.

6 Q. So 37.4 percent would have listed that activity in their  
7 top five uses of the Internet?

8 A. Yes.

9 Q. Okay. If you will turn to the next page for me,  
10 Mr. Negretti, page 40?

11 A. Yes.

12 Q. So I gather then this is just a continuation of that  
13 slide. So looking at the third activity, downloading music,  
14 29.9 percent of consumers would benefit, consider downloading  
15 music to be in their top five activities?

16 A. That is correct.

17 Q. And these are, again, a closed list of online activities  
18 that were provided to the consumer?

19 A. Yes.

20 Q. Okay. If you will turn over to 113, downloading music is  
21 a category of online activities. Do I read this right, that  
22 53.7 percent of the people participating in this study indicate  
23 that they engage in downloading music activity as an online  
24 activity?

25 A. Yes.

1 Q. So when you have got this data about the types of online  
2 activities that subscribers are engaging in, what from a  
3 marketing perspective, what's the company do with that  
4 information?

5 A. There's a variety of things we can do with the  
6 information. It depends on the strategic question or premise  
7 of what we're trying to learn and understand.

8 Q. What's your understanding of what Triple Play means?

9 A. Triple Play and bundling is combining multiple products,  
10 core products that we offer into a single entry to give the  
11 customer a value-added package or benefit.

12 Q. Is there a marketing goal of the company to promote all  
13 three or, I guess, all four product offerings to the same  
14 subscriber?

15 A. It's one of --

16 Q. Why is that a goal?

17 A. Our insights have showed us that when customers have  
18 deeper involvement in our products and services and have more  
19 of our products and services, they're likely to stay with us  
20 longer and be more satisfied than consumers who only have one  
21 or a single product or service.

22 Q. Is it important to the company that the consumer stay with  
23 the company longer?

24 A. Yes.

25 Q. Why?

1 A. Because the cost to acquire a new subscriber is a lot  
2 higher than the cost of satisfying an existing subscriber. So  
3 from a financial perspective, it benefits us to maintain  
4 existing relationships longer.

5 Q. Do you have an idea of what the average cost is to obtain  
6 an existing -- a new subscriber?

7 A. We use different -- I don't have a current figure, but we  
8 use different plugs in our business models. Somewhere relative  
9 to three to four hundred dollars per subscriber.

10 Q. That's the cost that the company thinks it takes to  
11 acquire a new subscriber?

12 A. Yes."

13 MR. CARACAPPA: Karl, would you pull up Exhibit 7?

14 "Q. Do you recognize this document?

15 A. Yes.

16 Q. What is it?

17 A. This is an insight study done some years ago trying to  
18 determine whether Cox wanted to provide added value to its  
19 high-speed Internet customers by providing subscription-based  
20 service through a partnership with a company called Rhapsody.

21 Q. Turn to page, the Bates number would be 219582, please.

22 A. 582?

23 Q. Yes, sir. Are you with me?

24 A. Yes.

25 Q. Having reviewed this document yesterday and understanding

1 Cox marketing and marketing initiatives, does this indicate to  
2 you that at least at the time of this report, 26 percent of the  
3 respondents were obtaining digital music from friends or  
4 peer-to-peer Web sites?

5 A. It appears that's what this states, yes.

6 Q. Can we move to 219584?

7 A. 58?

8 Q. 4.

9 A. 4, yes.

10 Q. Does this data chart indicate to you that 44 percent of  
11 the respondents were downloading individual songs free of  
12 charge as a method for using or accessing music online?

13 A. It appears so, yes.

14 Q. If you will turn to the next two more pages down, 219586,  
15 what's this data show to you?

16 A. So the chart represented here is asking consumers what is  
17 important to them in their choice of online music subscriber  
18 and is rating the attributes on the left-to-right basis in  
19 terms of most important to least important given the options  
20 that we gave them in the survey.

21 Q. And so am I understanding this correctly then that 78  
22 percent of the respondents in this study indicated that  
23 unlimited access to millions of songs was an important factor  
24 in selecting their online music source?

25 A. Yes.

1 Q. Do I also understand -- am I also reading this correctly,  
2 30 percent of the respondents indicated that online music  
3 source that facilitates music sharing was an important  
4 consideration in choosing an online music service?

5 A. Yes.

6 Q. And it indicates, doesn't it, that 1 in 6 of the Echo  
7 Boomers acquire methods through some free methods such as  
8 downloading for free, burning songs from friends, CDs, and  
9 "stealing" songs online. Do you see that?

10 A. I do see that.

11 Q. Any reason to doubt the accuracy of that statement in this  
12 document?

13 A. I have no reason to challenge that.

14 Q. Has Cox conducted any consumer research concerning the use  
15 of peer-to-peer file sharing networks?

16 A. I'm not aware of that."

17 MR. CARACAPPA: Exhibit 8, PX 1405.

18 "Q. All right, I think we're at Negretti 8. I'll show you  
19 that."

20 MR. BUCKLEY: John, can you pull that down?

21 MR. CARACAPPA: Sure.

22 MR. BUCKLEY: This is one of the documents, Your  
23 Honor, we were hoping not to have in the gallery screen.

24 THE COURT: Okay. Can you make that adjustment so  
25 that it just goes to the jury and counsel, or -- we don't know

1 how to do that?

2 MR. REILLY: Your Honor, I tried to find an answer  
3 during the morning break and could not.

4 THE COURT: Okay. All right. How do you want to  
5 deal with that then? Do you -- you've got hard copies to show  
6 to the jury?

7 MR. CARACAPPA: We may have hard copies for you, if  
8 that's okay.

9 MR. BUCKLEY: We do not.

10 MR. CARACAPPA: We don't have enough, Your Honor.

11 THE COURT: I'm not sure there's anybody but counsel  
12 and people related to the company here.

13 MR. WARIN: On our side of the room, that's true,  
14 Your Honor.

15 THE COURT: Yeah. All right, is that the case? Then  
16 why are we worrying about it? All we have is counsel here.

17 MR. CARACAPPA: It's not my objection, Your Honor. I  
18 don't know.

19 THE COURT: Yeah, Mr. Buckley, all we have is  
20 counsel.

21 MR. BUCKLEY: It's okay.

22 THE COURT: All right. Let's show it on the screen  
23 then.

24 MR. BUCKLEY: Hopefully when it comes up this  
25 afternoon, we can get this --

1 THE COURT: Okay. Well, hopefully, we'll find Lance.

2 MR. CARACAPPA: Thank you, Your Honor.

3 "Q. All right, I think we're at Negretti 8. I'll show you  
4 that. I believe you testified earlier, Mr. Negretti, that you  
5 looked at a P&L. I'm wondering if this is that P&L?

6 A. Okay.

7 Q. Is this the P&L you testified earlier that you had seen in  
8 preparation for your deposition?

9 A. Yes.

10 Q. Can you tell me what this document shows, just generally?

11 A. This will show the profit and loss on an annual actual  
12 forecast and historical basis for our product lines -- video,  
13 voice, data -- and include commentary and breakouts for review  
14 and cost.

15 Q. The first page is "Res Video Product P&L." I'm assuming  
16 that's residential video product; is that correct?

17 A. Yes.

18 Q. Meaning cable TV side?

19 A. Yes.

20 Q. Can you tell me how much money was spent on sales and  
21 marketing for the cable TV side in 2014 from this document?

22 A. Yes.

23 Q. How much is that?

24 A. \$238 million.

25 Q. Okay. And the next page is this residential data; is that

1 correct?

2 A. Yes.

3 Q. Are you able to tell from this document how much the  
4 company spent on marketing in 2014, sales and marketing for  
5 residential data?

6 A. \$286 million.

7 Q. The next page is res telephony, and that's the telephone  
8 business, P&L for telephone business?

9 A. Yes.

10 Q. And 2014 sales and marketing, if I read this correctly, is  
11 almost \$142 million -- about \$142 million?

12 A. Yes, yes.

13 Q. So sales retention is an expenditure designed to keep  
14 existing customers?

15 A. The sales retention group does multiple things. Mainly  
16 they are to process customer questions in terms of  
17 disconnecting, downgrading, and leaving us.

18 Q. And am I reading this correctly that \$63 million was spent  
19 in 2014 on sales retention?

20 A. That is correct.

21 Q. And sales acquisition spent in 2014 was \$88 million?

22 A. That is correct.

23 Q. What marketing does the company do to promote the ability  
24 to download and/or upload music faster?

25 A. We'll include a claim like that from time to time as a way



1 to explain the speed the consumers are getting."

2 MR. CARACAPPA: Pull up Exhibit 9, PX 1406.

3 "Q. I'm handing you Negretti 9 and ask you if that's an  
4 example? Do you recognize this document?

5 A. Yes.

6 Q. What is it?

7 A. I believe this is found on our home page at Cox.com.

8 Q. And what's the purpose of this marketing initiative?

9 A. The purpose is to show consumers how we provide faster  
10 speeds than our competitor to enable them to use our services  
11 in a more meaningful way.

12 Q. The company is using music as an example as part of this  
13 effort to promote faster speeds in the Cox network, is it not?

14 A. That is correct."

15 MR. CARACAPPA: Pull up Exhibit 10, PX 1407.

16 "Q. Do you recall this document, Mr. Negretti?

17 A. Yes.

18 Q. What is it?

19 A. This is a depiction of our Cox.com Web site.

20 Q. Do you know whether this is current or not?

21 A. Yes, it is current.

22 Q. Thank you. Turning to the second page, it has the same  
23 chart we looked at in Negretti 9. It looks to me that time to  
24 download song tab is depressed and the data shown that relates  
25 to the time to download the song. I just want to make sure I

1 understand that.

2 A. The data shown on this page reflects the time to download  
3 one song, yes.

4 Q. Are you familiar with the different bundle package  
5 offerings?

6 A. Yes.

7 Q. Can you just describe them for me?

8 A. At a high level, the lower the price bundle, the less  
9 content each of the products will contain, and then it just  
10 moves upward to include more products and more services and  
11 keeps going up across each four category levels.

12 Q. And the speed of the high-speed Internet increases with  
13 the higher bundles?

14 A. That is correct."

15 MR. CARACAPPA: Exhibit 12, PX 1409.

16 "Q. Do you recognize this, Mr. Negretti?

17 A. Conceptually, I recognize it, yes.

18 Q. Look at the bottom. Does that look like a Web address  
19 from Cox.com?

20 A. It does, yes.

21 Q. And on the second page, is this another example of a  
22 reference to downloading music under a speed matters tab?

23 A. Yes, I see that.

24 Q. Does Cox use the term "your friend in the digital age" to  
25 market and promote its products?

1 A. Yes.

2 Q. So generally, the more -- the faster the speeds and the  
3 more monthly data available means the more the subscriber pays?

4 A. Yes."

5 MR. CARACAPPA: Exhibit 16, PX 1412.

6 "Q. Mr. Negretti, I'm handing you Exhibit 16, please.

7 A. Okay.

8 Q. Mr. Negretti, have you seen this document before?

9 A. I have.

10 Q. Okay. So starting with 5, which I think is the first page  
11 you mentioned, what do you understand page 5 to represent or  
12 the data on page 5 to represent?

13 A. This document lists the series of uses on the left-hand  
14 side of why people could or should, could use the Internet  
15 service. The middle column talks about how often on an average  
16 basis that service is used or that feature is used, and on the  
17 right-hand side, it reflects how much data is consumed when  
18 that service is used.

19 Q. Do you see the reference to P2P BitTorrent toward the  
20 bottom of this list?

21 A. I do see that.

22 Q. What's that reference?

23 A. It references the average use by hours per month that  
24 would be used and then the data usage per session by hour, the  
25 gigabits by hour.

1 Q. Can you turn to page 7 for me?

2 A. Of Negretti 16?

3 Q. Yes, sir?

4 A. Okay.

5 Q. What's this slide show?

6 A. This is giving a household profile overview of the  
7 different attributes we spoke of earlier by a low-, medium-,  
8 and high-usage range.

9 Q. And what's the data show for P2P?

10 A. I'd need additional support in being able to interpret  
11 this, but I'd say it means that in the low category, 11 hours  
12 per month were used for P2P; in the medium category, 21 hours;  
13 and on the high category, 100.

14 Q. Can you turn to page 8?

15 A. Okay.

16 Q. Can you read to yourself that paragraph beginning  
17 "Comparing the low"?

18 A. Okay.

19 Q. Sure. Does this indicate to you that P2P activity is  
20 associated with high bandwidth use?

21 A. I'd infer that, yes."

22 MR. CARACAPPA: Exhibit 17, PX 1413.

23 "Q. Do you recognize No. 17?

24 A. Yes.

25 Q. What is it?

1 A. This is a chart showing how many end-of-year subscribers  
2 we have, and of those end-of-year subscribers by year, what  
3 their average tenure of months is between 2010 and 2014.

4 Q. So turn to the end-of-year subscribers. Do you know  
5 whether that number is high-speed Internet subscribers only, or  
6 does that include bundled subscribers as well?

7 A. My understanding of our product categories leads me to  
8 believe this is a high-speed Internet and a subscriber number.

9 Q. High-speed Internet?

10 A. Yes. Some were customers who have at least high-speed  
11 Internet service.

12 Q. Thank you. So they may have bundled packages or they may  
13 not?

14 A. That is correct."

15 (End of deposition testimony.)

16 MR. CARACAPPA: Thank you. Thank you, Your Honor.

17 THE COURT: All right, thank you.

18 MR. CARACAPPA: We'd like to move in all the exhibits  
19 that were discussed as well.

20 THE COURT: Any objection?

21 MR. BUCKLEY: No objection.

22 THE COURT: All right, they're received.

23 All right, next witness?

24 MR. CARACAPPA: We're reading in one more deposition.

25 THE COURT: Okay.

1 MR. CARACAPPA: And it's a quick one, I think.

2 THE COURT: All right.

3 MR. CARACAPPA: Do you have your exhibit binder?

4 THE COURT: I don't need a copy. I don't need a  
5 copy.

6 (Portions of the testimony of SANFORD MENCHER - by  
7 deposition, were read into the record as follows:)

8 EXAMINATION

9 BY MR. CARACAPPA:

10 "Q. Good morning, Mr. Mencher. Could you please state your  
11 name for the record?

12 A. Sanford Mencher.

13 Q. What's your current title?

14 A. Vice president finance and accounting.

15 Q. And how long have you worked in that role?

16 A. About two-and-a-half years.

17 Q. What are your duties as the vice president of finance and  
18 accounting?

19 A. I am responsible for managing our planning process, I'd  
20 say enterprise analysis, the accuracy and timeliness of our  
21 financial statements and accounting, and governance over our  
22 financial statement internal controls."

23 MR. CARACAPPA: Exhibit 1 is the depo notice,  
24 DTX 0274.

25 "Q. We're handing you what has been marked as Mencher Exhibit

1 1. Have you seen this before?

2 A. I believe so.

3 Q. And you're aware that you are here testifying on behalf of  
4 Cox; is that correct?"

5 MR. CARACAPPA: And at this time in the transcript,  
6 Mr. Bridges says, "I'll represent he's here testifying as a  
7 30(b)(6) witness of Cox Communications with respect to topics  
8 No. 9 and 19."

9 THE COURT: All right.

10 BY MR. CARACAPPA:

11 "Q. Okay. Are you familiar with topic No. 9, which is the  
12 average revenues per user for Cox service by type of service  
13 offered, i.e., TV, Internet, and voice, and the reasons for  
14 differences in revenue by type of service?

15 A. Yes.

16 Q. And are you prepared to talk about that topic?

17 A. Yes.

18 Q. And are you familiar with topic No. 19, the value of a  
19 high-speed Internet customer both individual and as part of a  
20 Triple Play bundle to Cox and the cost with cancelling or  
21 terminating a customer's account?

22 A. Yes."

23 MR. CARACAPPA: Exhibit 2, PX 1514.

24 "Q. So I have handed you what's been marked as Exhibit 2. Do  
25 you recognize this document?

1 A. Yes.

2 Q. What's this document?

3 A. This is our product P&L.

4 Q. By "our product P&L," whose product P&L are you referring  
5 to?

6 A. Cox Communications."

7 MR. CARACAPPA: Exhibit 5, PX 1515.

8 "Q. I am handing you what has been marked as Exhibit 5. Have  
9 you seen this document before?

10 A. Yes.

11 Q. What is this document?

12 A. It appears to be end-of-year subscribers 2010 to 2014, and  
13 it says average tenure in months for each of the years 2010  
14 through 2014.

15 Q. And what does end-of-the-year subscribers refer to?

16 A. It would appear that it is the subscribers as of the last  
17 day of the year for each of those years.

18 Q. Does Cox encourage its employees to retain the customers?

19 A. I'd say it depends.

20 Q. What does it depend on?

21 A. I'd say it could -- I mean, it could depend on whether --  
22 it could depend on whether or not it's the right decision, the  
23 right business decision.

24 Q. What would determine whether it's the right business  
25 decision?



1 A. Every, every customer is different, and I'd say every  
2 customer is different and, you know, while we'd like to retain  
3 every customer, it's not always -- sometimes it's in our best  
4 interests not to if we don't believe -- if the customer is  
5 costing us more than they may be earning us.

6 Q. How would a customer be costing you more than they're  
7 earning?

8 A. For example, if a customer wasn't paying their bill, it  
9 wouldn't be in our best interests to retain them."

10 (End of deposition testimony.)

11 MR. CARACAPPA: Thank you. That's it, Your Honor.  
12 I'd like to move in the exhibits referenced in the testimony.

13 THE COURT: Any objection?

14 MR. BUCKLEY: No objection.

15 THE COURT: All right, they're received.

16 MR. CARACAPPA: Your Honor, we are ready to call our  
17 next witness, but it may be a good time to break.

18 THE COURT: Is that Dr. Lehr?

19 MR. WARIN: That's Dr. Lehr, and he will be referring  
20 to some of the financial data that we're trying to keep off the  
21 big screen. So it would give us a chance to break to see if  
22 Mr. Reilly can find Lance to make that happen.

23 THE COURT: All right. Okay. I think we're --  
24 someone's going to come up shortly and assist you on that, but  
25 we'll break for lunch now, and we'll come back at quarter to

1 two, and we'll continue with the testimony at that time.

2 All right, you're excused. Thank you.

3 (Jury out.)

4 THE COURT: Is it Miguel that's coming up? Is that  
5 what you said?

6 It may not be Lance; it may be Miguel, but somebody  
7 is on their way up and hopefully will successfully help you.  
8 Anything else?

9 MR. REILLY: I have spoke with Miguel.

10 THE COURT: Okay.

11 MR. REILLY: He was trying to find Lance, but failing  
12 that, I guess he's coming.

13 THE COURT: Okay. Well, I don't know -- thank  
14 goodness I'm not responsible for keeping track of Lance.

15 All right, anything else before we break? Okay.  
16 Then we'll see you all at quarter to two. We're in recess.

17 NOTE: The morning portion of the proceedings on  
18 December 8, 2015, is concluded.

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20  
21 We certify that the foregoing is a true and  
22 accurate transcription of our stenographic notes.

23 /s/ Norman B. Linnell  
Norman B. Linnell, RPR, CM, VCE, FCRR

24 /s/ Anneliese J. Thomson  
25 Anneliese J. Thomson, RDR, CRR